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CIVILIZATION,

An Historical Review of its Elements.

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CIVILIZATION

AN HISTORICAL REVIEW OF ITS ELEMENTS

BY

CHARLES MORRIS

AUTHOR OF "THE ARYAN RACE," "A MANUAL OF CLASSICAL LITERATURE," ETC.

VOLUME II

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CIVILIZATION;

AN HISTORICAL REVIEW OF ITS ELEMENTS.

CHAPTER XV.

THE PROGRESS OF INDUSTRIAL CONDITIONS.

A PROPER consideration of the mechanical skill attained by ancient nations is apt to reduce our pride in modern industrial achievements, and to prove that the human intellect, so far as its inventive faculty is concerned, attained a development in the past which it has little exceeded in our own times. The idea of "lost arts," of valuable processes known to the ancients of which we have no counterpart, has been probably overworked. And yet their achievements, considering their limited facilities, were in many cases remarkable, and such as we, if reduced to their level of mechanical knowledge, would not probably surpass.

It is to the replacement of hand power by steam power, and the consequent invention of labor-saving machinery, that the great industrial progress of modern times is due. But so far as mental acumen in this direction is concerned, there is reason to believe that the ancients were as acute as are the moderns. In considering the intellectual merit of physical ability, it is necessary to take into account the level upon which that ability is placed. Every new step of knowledge gained forms a higher platform from which to reach upward, and equal industrial capacity, working now from the level of modern mechanical knowledge, and now from that of the far past, would produce very unequal results. That the mental powers of man do grow stronger with the ages there can be little doubt, but it would seem that in the industrial direction no marked advance in ability has been gained during a very long period.

Many of the early industrial achievements of man were wrought in stone, and have in consequence been well preserved. Numerous examples of this ancient handiwork have of late years been discovered, the most archaic being rudely chipped stones, the next in order highly polished stones of later origin, which served as the warlike weapons and the household implements of the rude tribes of primitive man. At a still later period a far greater diversity of productions came into use, of which but few relics exist. But these few suffice to show that the making of textile fabrics and pottery, the use of brick and stone in architecture, and other important arts, were of very remote origin.

The employment of stone in architecture, indeed, furnishes us with most striking instances of the skill, vigor and boldness of conception possessed by ancient man. In many parts of the world there still exist cyclopean edifices, erected at a period to which history does not extend, and indicating an ability to lift huge masses with simple means before which we stand in admiration and wonder. One of the most ancient forms of these great monolithic erections is the *Cromlech,* or table stone, which consists of one large flat stone supported on several upright ones. Another form is the *Maenhir,* or single erect monolith, of which the best example occurs at Carnac, in Brittany, where stands a huge stone column, rudely circular in shape, which was when perfect sixty-three feet high, and fourteen feet in its greatest diameter. It weighs about 260 tons. Many of these upright monoliths are arranged in circles and other figures, the most remarkable example being that of Stonehenge, in England. Here is a circle of huge erect stones, whose summits were formerly connected by accurately fitted horizontal monoliths, the whole composing a temple the method of whose erection we cannot comprehend, and which we would hardly undertake to rival without the use of steam power. Architectural marvels of similar grandeur exist in many parts of the earth, now taking the form of huge earth mounds, now of massive walls, now of arched rooms, great temples, or vast pyramids. The great Egyptian pyramid of Gizeh is in this respect the most extraordinary monument of the mechanical skill and architectural daring of mankind, since it was erected at an early date in extant Egyptian history, and indicates the ability at a very remote period to quarry, shape, transport and lift enormous blocks of stone.

In the less striking but more useful mechanical arts considerable advancement was early attained, as is evidenced by the achievements of Egyptian, Assyrian, Indian and Chinese artisans. The Egyptians, for instance, were expert in many of the useful arts, and produced a great variety of articles of household furniture and pottery, utensils of glass, etc., which were skilfully wrought and frequently ornamented with considerable taste. In this work they employed many of the tools of modern mechanics, and representations of axes, planes, saws, chisels, gimlets, drills, etc., occur on the monuments. In the weaving of textile fabrics they were very skilful, and their fine linen was occasionally of extreme delicacy. They practiced mining, and made great use of bronze for weapons and implements. Iron was apparently known to them, but was probably too costly for common use. One of their most important inventions was that of paper, the product of the Egyptian papyrus plant being the only satisfactory material for this purpose known to the European world until comparatively recent times.

The Assyrians also carried the industrial arts to a high state of perfection, and were equally skilful with the Egyptians in pottery and metal work, in the arts of the lapidary and the architectural stone cutter, in the formation of household furniture and utensils, in the production of articles of ornament, of textile fabrics, and of the varied industrial requirements of an active civilization. In architectural labors they displayed a vigor and boldness only second to that of the Egyptians. Their architecture, however, was principally of brick, though heavy masses of stone were used in sculpture, and were transported for considerable distances.

In China and in India mechanical ability manifested itself at an early date, and reached a state of advancement at a remote period which it has still but little exceeded. In addition to industries similar to those of the other nations mentioned, the manufacture of porcelain and the weaving of silk fabrics, with the discovery of the magnetic compass and the art of printing, were the most important ancient industrial achievements of China. In India the weaving of cotton became at a remote epoch an important industry, while the arts of smelting iron ores and making steel implements were early discovered. The most remarkable evidence of the ability in iron manufacture possessed in ancient India is the celebrated iron pillar of Delhi. This consists of a solid shaft of wrought iron, more than sixteen inches in diameter and over fifty feet long. Its date is probably about the third or fourth century, A. D. Such a huge shaft could not easily be exceeded by modern metallurgic skill, and it is impossible to comprehend how the Hindus with their simple methods produced it. Works of this massive character, of which many others might be named from various parts of the ancient world, certainly indicate a high degree of mechanical ability, greater indeed than we can easily understand when we consider that the ancients had no knowledge of the steam-engine, that colossus of strength to which the grandeur of the nineteenth century is due.

The arts of the earlier nations were all practiced and brought to a great state of perfection by the Greeks and Romans, while numerous new implements and articles of adornment and of household comfort were produced. Yet there was no marked line of demarkation between the productions of this and of the remoter ages except in one particular, that of artistic finish. In this respect the Greeks stepped decidedly beyond the level of the more ancient nations, and gave to everything which they touched a beauty of outline and proportion which has never been surpassed and rarely equalled in the modern world. First among the Greeks do we find the arts of veneering and turning, the former greatly increasing the use of the more costly woods, and the latter facilitating the rapid production of graceful curved forms. The arts of the potter, the jeweler, and the lapidary were also greatly improved, while the cotton and silk fibres of India and China were now first introduced into the continent of Europe. The art of bronze casting was carried to great perfection, and statues of extraordinary size were produced. Of these the Colossus of Rhodes was one hundred and five feet in height, and contained three hundred and twenty tons of bronze, or brass as the ancients called it; yet it was surpassed by the bronze statue of Nero at Rome, if, as Pliny says, the latter was one hundred and ten feet high. The use of iron first became common among the Greeks, whose civilization, therefore, formed the definite beginning of the great "iron age," within which the world is still embraced.

Under the Roman civilization the useful arts made considerable progress, though there was no specially distinctive discovery. A degree of luxury in household adornment was practiced superior to any previously known. Silk goods, from being at first exceedingly costly, came gradually within the reach of the middle classes. The art of glass-making was greatly improved. Glass windows came into use in the later days of the empire, and are said even to have been used in the houses of Pompeii. As an example of the finer glass-work of Rome we possess the Portland vase, the skill displayed in the formation of which could not easily be surpassed by modern artisans. Iron had now become abundant and cheap, and the free use of this important metal in war had much to do with the rapid spread and long dominion of the Roman empire.

If we consider the industrial history of the past, and especially of the remote past, from a philosophical point of view, our attention is particularly directed to one important circumstance, namely, that in the development of every civilization there was a period in which size was the test of merit, and in which rulers sought to perpetuate their memories, and priests to honor their deities, by the erection of stupendous edifices. The great weights moved by old builders, and the immense buildings erected, have been frequently compared with the less ambitious productions of modern architects, with the implication that the world has lost the vigor and boldness of its younger days. What it has really lost, or grown beyond, is the barbaric idea that size is the highest standard of merit; while it has attained the nobler conception that grace and beauty are far more meritorious than greatness of dimensions. It must also be borne in mind that the great works of the far past were built mainly for show; those of the present are built mainly for use. The nation which to-day should erect a pyramid would be looked upon as mentally undeveloped. The railroad, the steamship, the bridge, the tunnel, and the like useful appliances form the cyclopean works of modern times.

Every budding civilization of the past has left its mark in huge edifices offered to the admiration of succeeding nations, and so solidly built that they have survived all the convulsions of nature and all the chances of war. We find such mighty works in Peru and Mexico of the western continent, and in all the ancient homes of civilization of the eastern, and even in regions where civilization seems never to have existed. An interesting illustration of this principle is seen in Russia, whose recent semi-barbaric age of development is indicated in its huge bell, the massive monolithic columns of its churches, and the enormous stone pedestal of its statue of Peter the Great, which vies in weight with the monoliths of the past ages.

Yet the ancient world did not utterly neglect the question of utility, while doing so much for show. In the practical nation of China in particular, utility replaced show in the purpose of the great works of mechanical skill. The grand canal and the vast defensive wall of China rank with the greatest works the world has ever seen. Yet in their production the benefit of man was the sole consideration, and the glorification of gods and heroes took no part. A similar utilitarian spirit was manifested in Peru, whose great temples were surpassed by its remarkable military roads, which approach the pyramids of Egypt and the wall of China in the labor involved in their formation.

But we must come down to the modern world to reach an age in which utility has gained complete supremacy, in which every great work performed is intended to increase the comfort, not to excite the wonder, of mankind, and in which the ornamental, though by no means neglected, has become subsidiary to the useful. It is recognized that in regard to mere bulk nature has produced works of which man can form but miniature imitations, and the cultivated eye of man has come to admire grace rather than size, and his practical mind to lightly regard the useless, however ornamental it may be. In consequence the tendency of all modern industry is to combine the two desirable requisites of beauty and utility, and to produce works which, while fully conducing to human comfort, are adapted to meet the artistic demands of the developed intellect.

After the fall of the Roman Empire industry receded to a stage suited to the barbarous social and political conditions which prevailed. Many of the arts of the ancient world were lost, and some of these "lost arts" have never been recovered. More than a thousand years passed before industry regained the level from which it had so deeply descended, and its recovery was in great part due to imitation and reproduction of the works left by the older world.

For the preservation and dissemination of these ancient arts of utility we must look rather to the Mohammedans than to the Christians. The Arabians, already possessed of a considerable degree of culture, spread over the region of the earliest civilizations and rapidly made the arts they found their own. For this they were far better prepared by their previous history than were the much ruder natives of Northern Europe, who overflowed the western seats of Roman civilization. In consequence we find that the Arabian empire quickly grew skilled in all the industrial arts, while its European rivals remained destitute of many of the ordinary elements of comfort. At an early period the Arabs of Spain set before the Christians of Europe the example of a highly advanced industrial civilization. For one instance of this we may quote Draper's concise statement, that a man might have walked at night ten miles in a straight line through the streets of Cordova by the light of the public lamps, while seven centuries afterwards there was not a single public lamp in London. The streets of the Arabian city were solidly paved, while in Paris centuries afterwards the streets were sloughs of mud whenever it rained.

It is not necessary to repeat the remarkable story of this Saracenic civilization of Spain. It will suffice to say that, luxurious as it was, it produced no new art of striking importance. It simply served as a link to connect the past with the present, and as an example to the ruder nations of Europe of which they very slowly availed themselves. The agriculture of the ancient world was fully retained, and carried to greater perfection, by the Arabians, who in Spain brought this art to a degree of excellence which was never before equalled, and has been surpassed only in the era of modern scientific agriculture. In the Christian nations we owe the revival of agricultural skill to the monks, who earnestly and successfully practiced and taught the arts of drainage, of soil improvement, of fruit cultivation, and the other important elements of field culture. It was late, however, before the pastoral and agricultural arts regained in Christendom the status which they had held in the ancient empires.

In regard to the mechanical arts the same slow progress is discernible. Gradually the world recovered what it had lost, and attained its ancient level as a basis for further progress, but many slow centuries passed before this recovery was fully achieved, and until late in the eighteenth century, except in certain special directions, the civilized world had made little industrial advance beyond its condition fifteen centuries before.

Yet in the special directions alluded to it had made highly important progress, and achieved discoveries which, while perhaps of no extraordinary merit in themselves, have had a revolutionary influence on the conditions of civilization. There are three of these achievements which in their results may fairly be called great ones. These are the discovery of gunpowder, of the mariner's compass, and of the art of printing. The last two, indeed, cannot rightly be called modern discoveries, since they were known to China at an ancient date, and possibly came to Europe therefrom. But they fell almost flat in stagnant China, while they yielded very valuable results in active Europe. These results we can only epitomize. The magnetic compass first enabled man fairly to discover the world upon which he lived. To his empire of the land it added the empire of the ocean, and has had a vital share in the important work of making one family of all mankind. The art of printing has produced an intellectual revolution quite as great. It has laid at the door of the meanest citizen the learning of mankind, like a precious gem placed within the reach of all, and it is gradually destroying that marked division of man into the two classes of the learned and the ignorant, which prevailed throughout the ancient world. The first discovery mentioned, that of gunpowder, has been little less important in its effects. It has produced a political revolution parallel to the intellectual revolution mentioned. The roar of the cannon and the sharp crack of the musket gave a fatal shock to old political methods, for they revolutionized the art of war, and brought the private in the ranks on a level, in regard to power of life and death, with the general at the head of the army. Before these new weapons of war the old institution of knighthood fell prostrate, while feudalism sunk into decrepitude, and all mankind was brought to one level of strength, as the art of printing had brought it to one level of knowledge. The discoveries mentioned may therefore be viewed as the corner-stones to the mighty edifice of the modern world.

The industrial progress which we have here very briefly reviewed was the work of many slow centuries, and of gradual improvements in the mechanic arts which only at long intervals rose to the level of an important invention. Within quite recent times, however, there has been an extraordinary quickening of this rate of progression; the world has taken a grand bound forward, and invention and discovery have followed each other with bewildering rapidity. This important change we must ascribe largely to two causes: the invention of the steam-engine, and the growth of inductive science. Two other causes, already mentioned, have had, perhaps, no less powerful an influence: the invention of printing, by its wide dissemination of knowledge, and the intellectual quickening it has produced; and the extension of navigation, by its many additions to the raw materials of labor, and its opening of world-wide markets to the productions of civilized skill.

It is, however, to the invention of the steam-engine that we must particularly revert, as by far the most important element in the various causes leading to modern industrial progress; and with this invention we can fairly date the beginning of what may be designated recent times, in distinction from modern times as generally considered. During all the preceding ages, anterior to the opening of this period, the labor of the world had been performed by human muscles. It is true that animal power had been used to some extent, and more recently the power of the wind and the water had been occasionally employed; yet as a rule the labor of the world had been done by the hands of man. But now a far mightier laborer had suddenly come into the field, before whose giant strength the vigor of man was dwarfed, and a revolution at once began in the industrial world whose full effects are by no means yet produced. With the invention of the steam-engine, and the accompanying free use of coal as fuel, man's productive ability was at once tenfold increased; articles which had previously been the luxuries of the rich were so cheapened that they became the necessities of the poor, and the demand of the world sprang quickly to a level with its productiveness, which level it has maintained with every new increase in its powers of supply. The invention of the steam-engine, however, was not alone competent to yield these grand results. It was but the starting point in a long series of inventions to which it gave the cue. The ingenuity of man was no longer restricted to making articles for human consumption, for there opened out a broad field in the formation of machinery for the more rapid production of these articles.

The invention of labor-saving machinery, with its marvelous precision and rapidity of action, is the peculiar industrial feature of recent times, and the one which most broadly distinguishes it from the hand-working eras of the past.

We cannot attempt to specify the many directions in which steam-power has benefited mankind, and a brief allusion to a few of the more important recent achievements must suffice. Perhaps the most important of all is the extraordinary improvement in the facility of travel, through the employment of the railroad and the steamship, those great inventions which have done so much toward overcoming human isolation and national prejudice, and making one city of every nation, and one nation of all mankind. The increased power of transportation of products effected is of equal importance with the increased rapidity of human movement, and the market of every field and every factory is no longer its immediate neighborhood, but embraces the civilized world. Another important result of modern invention is the vast increase in food production effected by the application of labor-saving machinery to agriculture; to the harvesting, threshing, grinding, and distribution of the grains, and to the various other operations connected with the preparation of food. These inventions have lifted agriculture to a level immensely beyond that attained in ancient times. Not less important are the vast improvements in the working of the metals, in the formation of textile fabrics, in the art of printing and book-making, in bridge-building and tunneling, in the making of instruments of precision for scientific and mechanical purposes, in clock and watch making, and in a thousand and one minor processes which must be left to the reader to recall for himself. The subject is too broad a one to be dealt with here, and we simply wish to render evident the fact that the invention of the steam-engine was the opening of a new era in human industrial progress.

But, as we have already said, there were other inducing causes to this rapid progress. One of these was the improvement in navigation, and the consequent discovery of new raw materials of industry. Of these we may here name the numerous new food plants introduced, the tea, coffee, sugar, rice, Indian corn, spices, etc., which now came into common use; the discovery of new textile fibres, and the vast extension of the field of cultivation of the old ones, especially cotton; the introduction of new dyeing materials, such as indigo and cochineal; the employment of many new and valuable woods, such as ebony and mahogany; the discovery of new medicinal specifics; the cultivation of new fruits and vegetables; and the dissemination of food, and of draught animals to new pastures throughout the world. In the last direction the peopling of America with the horse, the ox, and the other domesticated herbivora of the East may be particularly specified.

Still another cause of modern industrial progress, quite as important in its results as labor-saving machinery, is the progress in inductive science, to which we must now allude as the third inciting element in the industrial development of recent times. To it are due the most striking and extraordinary of modern discoveries and inventions. Thus to the advancement in chemical science we owe the discovery of photography, that most wonderful of the useful arts. To it are also due the production of many new dyes, the valuable coal-tar colors; the invention of machines for the production of artificially-made ice; the highly valuable art of food preservation, by which meats and fruits can be kept for an indefinite period beyond the reach of decay; the use of illuminating gas for light and fuel; and numerous other minor discoveries of valuable processes.

The science of electricity has been equally prolific in important discoveries, of which that of electric telegraphy ranks among the most valuable of modern achievements. To this must be added the telephone, with its magical powers of conveyance of speech, which may enable it in time to outrank the telegraph in usefulness, the art of electro-metallurgy, the introduction of the electric light, and the employment of electricity as a motor power, as the more important of the industrial gifts of electric energy to the world of man.

We might go through the circle of the sciences, and adduce from each of them some important addition to the industrial processes of recent times, but the above named will suffice as the most remarkable of these discoveries. Indeed, the subject of modern industrial development is an interminable one, and we must conclude this brief review by a reference to two of its triumphs among the many not above mentioned. One of these is the postal service, which, in its existing cheap and extended form, has brought the lips and ears of the antipodes together, and permits a freedom of personal communication between the inhabitants of the world whose efficiency has been remarkably intensified by the more rapid though more costly telegraphic service. The other art to which we shall allude is that of the great improvement in the value of fruits and vegetables, and of the breeds of domesticated animals, which has been produced by intelligent selection, and is not the least of the services which recent industry has given to the world. To these should be added the art of fish culture, and the stocking of worked-out streams with young fish, a process which promises a highly important addition in the future to the food stores of mankind.

Such is a partial statement of the industrial record of the nineteenth century, which has at a single bound equalled, if not surpassed, the results of human invention in all preceding ages. Admirable as is this record, it is one at which we cannot fairly be surprised, when we consider the conditions leading to it. For during all the preceding eras the stores of fuel laid up by nature in the rock depths slept untouched, and man did only what his weak hands were able to effect. In the present era this fuel has been employed to set in motion the iron hands and arms of millions of powerful machines, which immensely surpass the muscles of man in strength and endurance. And although in ancient times certain men may have possessed acuteness and skill equal in merit to any that single men now display, yet the number of such able men at that early period has now been multiplied a thousand fold, through the general diffusion of education and the many incitements to mental activity in the recent civilizations. Decidedly, in the words of the old painter, who told a curious questioner that his colors were mixed "with brains," we may say of the modern artisan that his work is "mixed with brains."

There necessarily follows this review of the progress of invention a similar review of the consequences of invention in the improvement of the condition of mankind. The results of human labor may be classed in two grand divisions, the Fine Arts and the Useful Arts, with the latter of which we are alone here concerned. The object of the former is to promote the pleasure, that of the latter to increase the comfort, of mankind. Or under the Fine Arts might be included all that is devoted to the psychical enjoyment, under the Useful Arts all that adds to the physical enjoyment, of the human race. In considering the results of the latter, then, we have but to review the enhancement of human comfort, without reference to that mental pleasure and elevation which spring from the exercise of the Fine Arts.

The early civilized nations needed far less of what we consider the comforts of life than do the later ones. The difference in climatic conditions has made a marked difference in human demands. Civilization arose in semi-tropical lands, where the sun emancipated man from many of the needs of the shivering inhabitants of the north. Clothing was an unimportant consideration where the sun supplied all requisite warmth. Habitation was also of secondary importance where people dwelt habitually in the open air. Furniture was likewise a matter but little considered, and food was so cheap and abundant that there was no special incitement to increase its supply or its variety. When wants are so simple and so few, human progress is apt to be a very slow process, and if it depended only upon the demands of the common people would almost cease. But in all the early civilized states the wealth in food products naturally produced a numerous nobility, who demanded a higher grade of comfort, and sought to surround themselves with the adornments of luxury. It was to supply the demands of this higher class that industry constantly sought to improve its processes, and to invent new forms or kinds of products. In consequence, for a very long period in the history of mankind all the skill and ability of the working classes were given to promote the comfort of the idle few, who despised labor and oppressed the laborers.

In the subsequent history of civilization we find that it steadily moved northward, the earlier civilized nations slowly sinking into mental decrepitude, while high civilization pushed its way into the colder climate of the north. But with every such movement the absolute requisites to human comfort increased in number. The common people of Greece and Italy needed more abundant clothing and firmer habitations than did the sun-basking inhabitants of Egypt. The ordinary life of man was still an outdoor one; yet it was much less so than on the banks of the Nile or of the Euphrates, and the demand for the essentials of domestic comfort necessarily increased. In these countries the main incitement to industrial progress was still the demand of the luxury-loving higher classes; but the lower classes became a more important element in the situation than formerly, their desire for the essentials of personal comfort increased, and the supply of manufactured material necessarily grew much greater as the demand became more urgent.

In modern times civilization has taken another broad stride northward, and set its foot upon chilly regions in which the difficulties of nature hindered its native evolution, but have greatly favored the growth of the exotic product. This planting of civilization in the zones of frost and snow has immensely added to the essentials of human comfort. It has made necessary much more abundant clothing, more solid and substantial habitations, a greatly increased employment of artificial heat, a far more strenuous effort in the production of a full supply of food, and has given rise to a home life that can scarcely be said to have existed under the ardent suns of the ancient civilized world. This indoor life has, in its turn, created a demand for a much greater abundance and variety of domestic implements and furniture than were formerly required, and has played a very important part in arousing the inventive genius of modern artisans.

Undoubtedly of late, as of old, the needs of the rich have been the most powerful inciting cause to productive development, but the demands of the poor have also become an essential element in the situation. The common laborer of the Middle Ages was on a level with the field laborer of Egypt under the Pharaohs, as regarded personal possessions; yet the former dwelt in misery, while the latter dwelt in comfort. The half-clad limbs of the one shivered in the wintry chill, while the nearly naked body of the other basked in warm solar beams. The one lived in a state of semi-starvation, while the other was sufficiently fed from the prolific harvests of the Nile. Thus in the one there was a constant desire and demand for better conditions, while the other remained contentedly stagnant under the enervating warmth of tropical suns. It is to this cause that we must partly ascribe the great rapidity of modern industrial progress. The artisan is no longer content to work only for his superiors in position, but has come vigorously himself into the field as a consumer. There has thus been rendered necessary a far greater supply of manufactured goods than sufficed for the few wants of the masses of the older nations, and the pressure on the productive skill and inventive ability of the artisan class has grown in a marked ratio.

To this earnest demand from the lower classes for the absolute requisites of comfort must be added a growing elevation of the standard of comfort, caused by the general education and the widely disseminated intelligence of modern times. If we consider the conditions of the European world for a number of centuries back, the slow uplifting of the standard of comfort will plainly appear. One century is dissatisfied with a degree of enjoyment which was beyond the aspirations of the preceding one. The inhabitant of the hut in one period asks in the next for a little more and better food, a somewhat warmer house, and slightly thicker clothing, to give him perfect comfort. His counterpart of a century later finds himself possessed of more than his predecessor had desired, and yet he is far from content. Life has opened out more widely before him, new vistas of aspiration extend before his mental gaze; yet the misery of existence has but slightly lifted its shrouding folds, and he craves unattained comforts with as keen a longing as did his more modestly desiring predecessor.

And so goes on the tale. What were at first luxuries to the rich become their requisites of comfort, and luxury takes an upward stride. The comforts of the rich become the luxuries of the poor, to be striven for with ardent desire. These luxuries when once fully enjoyed, sink to the rank of comforts, and aspiration craves new luxuries. Thus continuously what were the enjoyments of the rich have become the comforts of the poor, and the seemingly absolute needs of a comfortable life have grown steadily wider and deeper, until in the present age the day laborer finds himself, in his thirst for higher conditions, but vaguely content with conveniences many of which were unattainable and even undreamed-of luxuries to the rich and noble of a few centuries past.

These considerations lead us to the third division of our subject. We have reviewed it in respect to the growth in kind and quality of productions and the consequent advance in the standard of human comfort. It needs to be still considered in regard to the condition of the laborer himself, and the development of his social and political relations to the community of which he forms an integral part.

In the primitive stage of human industrial history men were, almost completely, equal in wealth and condition, and each was obliged to supply his needs by the labor of his own hands. Perhaps from the very earliest date, however, there existed a division of labor of a not very chivalrous character. All duties connected with household life, with agriculture, and with other ordinary pursuits, were imposed upon the women; while the men of the tribes restricted their labors to the nobler duties of war and the chase, and grew to despise the daily drudgery of life as too base for their lordly sex. This state of affairs could not continue after the business of ordinary life grew complex and onerous. It is only found among the lower savages and in the hunting tribes. In the pastoral races there are duties of drudgery which men must perform. The labors of the chase are here replaced by the more burdensome demands of herding, but the work of the women of the tribe is in no sense reduced. With the rise of agriculture it became necessary for man to devote himself to steady daily labors, and the savage separation of society into male idlers and female workers ceased to exist. Both sexes seem to have taken part in primitive agriculture, and though the labors of the household continued to be the special province of woman, yet to a considerable extent the duties of the two sexes overlapped. Only at a later date and in a higher state of civilization did the duties of man and woman again become definitely separated. This separation, in fact, has never taken place in certain civilized communities. In several European states the women of the humbler classes continue to perform arduous field and mechanical labors, and only in the higher classes are their duties confined to household concerns. In the new relations of labor in modern times, indeed, woman is again invading the field of productive work, and claiming her due share of the world's profits.

With the progress of civilization a second division of the population took place. A rich and powerful class arose who grew to despise the labor which was becoming the duty of a humbler class. This disposition to look upon labor as degrading only gradually appeared. It had not arisen in Greece in the Homeric era. Indeed, it never became as strongly developed in Greece as it did in Rome. In its first form it doubtless was a consequence of the immense wealth accumulated by a prolific agriculture, or by successful war. The labor of a portion of the people, in Egypt, Babylonia, India, China and Peru, was sufficient to provide the whole with abundant food and other necessaries, and there naturally arose a large governing, defensive, and priestly class, to whom manual labor was unnecessary, and who in time grew to despise it, and to view the laborers as belonging to a lower order of humanity.

In distinctively warlike nations the separation into producers and non-producers arose from a different cause, whose early operation we perceive most clearly in the Persian empire. This empire arose through the conquests of a vigorous tribe, which reduced a vast region to subjection, and held a rod of iron over many millions of conquered subjects. The Persians in consequence became a nation of soldiers, obtained the necessaries and the luxuries of life as tribute, and grew to contemn the labor which became the distinctive mark of the conquered as contrasted with the victors.

These two modes of separation into laboring and non-laboring classes are interesting, as showing how one result may arise from two totally unlike causes. In Egypt, which in all its centuries of development seems to have been unwarlike, the separation was a result of the fertility of the soil and the over-abundant production of food. It was a division of the learned, enterprising, and ambitious from the dull and stolid mass. In infertile

Persia, on the contrary, the separation was a consequence of warlike conquest, and was into the two classes of courageous victors and yielding subjects. A highly interesting instance of the latter method of division appears in the empire of Peru, if we correctly interpret the character of its development. The indications are that what was originally a small tribe, that of the Incas, gradually spread its power by conquest until it subdued the inhabitants of a very extensive region. But the results of this conquest were far more striking than in the parallel case of Persia. The Persians continued to dwell in their native region, governed from a distance, and failed to interfere with the political, social, and religious conditions of their subjects. The Incas, on the contrary, abandoned their native home, spread themselves throughout their empire, governed it directly, and made vital changes in the social, political, and religious condition of their subjects. The whole empire was made homogeneous, every barrier of national distinction broken down, and a communal system of industry established in which a sufficiency of the ordinary necessaries of life was secured to the people, while all the excess production became the property of the ruling tribe, to be employed as they saw fit. The Peruvian empire was thus the completest outcome which the world has ever known of the warlike process of separation into two distinct classes, while at the same time it was the only instance of communistic institutions on a national scale. The result was that which seems the dangerous tendency of all communism, namely, industrial stagnation and a cessation of development.

These consequences of war lead us to the consideration of certain other consequences, which have been of still more vital importance in the industrial history of mankind. It was only in cases of complete conquest that the subjects were permitted to dwell in their old homes, and simply pay tribute to their new rulers. In cases of partial or temporary conquest they were usually deported in large numbers to the country of the victors. There, as before, they were obliged to work for the benefit of their rulers, but under markedly different conditions. They failed to become citizens of their new country, while they lost all the political privileges which they had possessed in their old. In other words they were reduced to a state of slavery.

This subject of slavery is a highly important one in any consideration of the ancient industrial conditions of mankind. The reduction of prisoners to slavery began as soon as their labor became of use, and their slaughter the waste of a valuable commodity. It grew more prevalent as man progressed in civilization. Slave-holding is common in the pastoral tribes of Asia to-day, and was apparently still more common in the early Aryan communities, whose agricultural condition required a greater degree of manual labor than is needed in pastoral occupations. Its prominence increased as warlike states became more extensive. It probably was a widespread institution in the empires of Assyria and Persia, it became predominant in the states of Greece, and reached its culmination in the empire of Rome, in which the third principle of division of communities, that into citizens and slaves, was most fully carried out.

The slave population of these early days was not alone the result of war. Men were enslaved for various causes, as for crime, for debt, and even as a result of gambling. Commerce was devoted largely to this profitable industry. The Phœnicians, the earliest navigators of the Mediterranean Sea, indulged so persistently in man-stealing that they were finally forbidden to establish colonies in Greece and Italy, as being unsafe neighbors. Ever since that period the Mediterranean has continued to be, at intervals, the field of a profitable slave commerce, this active industry, which was established some four thousand years ago, having been but recently brought to an end. As regards the modern slave trade, of which the negro natives of Africa are the principal victims, we have no call to speak at this point. It will suffice to say that it indicates a marked difference between the conditions of modern and ancient times, since formerly the main harvest of slaves arose from war, and commerce was a secondary source; while recently war has ceased to afford slaves to civilized nations, and commerce has become their only source. In all cases, however, the political result of slavery is the same. Its tendency is to separate mankind into two classes, a producing and a non-producing, and to originate in the latter a proud disdain of labor.

Slavery, however, as a national institution, reached its culmination in the Roman empire, the inhabitants of which were divided into two classes almost solely on this basis. The agricultural population of Rome were very largely in a state of slavery, though not all on the same level of servitude. In addition to the absolute slaves was a large class of *coloni*, or bond laborers, who were attached to the land and could not be sold away from it, but were otherwise almost destitute of political rights. The artisan laborers of the cities were principally slaves. Under the Roman republic and in the earlier empire operative industry was a domestic occupation. The proprietors of slaves had everything they needed manufactured at home, and even sold their excess products to others. The free class, as a rule, disdained labor, however poor and degraded they might be. They attached themselves as hangers-on to the rich, for whom they were ready to perform the basest and most secret services. In return they required to be supported in idleness. At a later date they were fed and amused by the state, and constituted a proud, idle, and turbulent populace, a perilous element in the empire. It was a division into producers and non-producers on a new and unnatural basis, since the superior class was no longer confined to the rich, learned, and powerful, but embraced a large indigent element of the basest character.

As for the pursuits of artisanship, which, as we have said, were principally conducted by slaves, a slow change took place at a later period, which is visible only in its results. Freedom was never gained by the agricultural population of Rome. Until the last days of the empire these remained in a state of hopeless servitude. But artisan labor imperceptibly passed from the hands of slaves into those of freemen. This may have been largely the result of manumission, which was a frequent event in Rome, and produced a considerable body of freedmen in whom disdain of labor was not ingrained. We do not, however, know the true causes of the change which gradually took place; but in the later days of the empire the artisans were free citizens, who worked for their own profit, and directly supplied the public demand.

Rome, indeed, is the only nation on record in which the artisan class was in a state of legalized slavery. There is nothing to show that this was the case in the cities of Phœnicia, and it was certainly not the rule in the commercial cities of Greece. Its nearest counterpart was the partial thraldom of the city laborers during the Dark Ages of European history. In fact, the mechanic class of no nation has ever submitted quietly to oppression. There is a steady upward pressure always exercised by this portion of the community, and a readiness to seize upon every inch of liberty granted, which, in time, cannot but produce important effects, and which has been a leading agency in the attainment of political rights. How it produced its results in Rome is a matter of which history has taken no cognizance. This is one of that humble class of events which have remained below the level of the proud glance of history, and whose importance is only now growing into recognition, as we begin to perceive that kingship has not been the shaping and controlling power in human affairs. It is a part of that "history of the people" which only began to be written after its data had in great part disappeared.

The unnatural division of the Roman population showed its results in another direction. Elsewhere mental ability always rose to the surface, and gradually gained supremacy in the state. In Rome, intellect was often possessed by slaves, who had no more political rights than the cattle of the fields. However mentally able they might become, politically they stood at an infinite depth below the ragged, swaggering citizen who could claim descent from Roman ancestry. Several striking instances of this strange discrepancy exist. Andronicus, the first Roman dramatist, was a Greek slave; Terence, the great comedian, was a Carthaginian slave; Epictetus, the celebrated philosopher, was the slave of a freedman; even Horace, the greatest of Roman lyric poets, was the son of a freedman; and other less important instances of the same kind might be cited.

With the establishment of the European kingdoms which succeeded the fall of Rome, the industrial condition of mankind entered into new relations. A very vigorous force was brought to bear against the institution of slavery — that of the Christian church. During the period in which Christianity was the state religion of the Roman empire the influence of the church had been similarly arrayed against slavery, and not without producing a considerable mitigation of its evil effects. Through all the debased conditions of the barbarian kingdoms this steady pressure was kept up, and we owe it largely to the Roman Catholic priesthood that human slavery gradually vanished from among the institutions of the Middle Ages. Serfdom, or enslavement to the land, was a constantly varying condition, founded on no general laws, and steadily opposed by the moral forces of the times.

In point of fact we might almost say that the Middle Ages were destitute of general laws and civil institutions. Feudalism, the form under which society became organized, was a military rather than a political institution. Nations were organized as armies, not as states, with ranges of officers extending downward from the chief or king, through successively descending grades of nobles, to the rank and file of these great encamped armies. Feudalism thus, in its most thorough organization, as it existed in France, presents us an instance of a fully organized military state, in which society is arranged on the basis above stated, each officer holding rank in accordance with the number of men-at-arms he can lead to the field, and each superior officer possessing military authority over all below him, while all owe military duty to the chief or king.

This is nearly all we find in feudalism. There is almost no civil organization. The people, the workers of the land, are destitute of any political position in the state. They are the slaves of the land to which they are attached, and of the noble owners of this land, and as members of the nation have little more voice than the beasts of the field. Yet, though the people had no redress against the despotic will of their immediate lords, they could defend themselves against others, could hold property, sell, and sue for debt. In fact, a sort of civil organization existed among the serfs, below the level of the feudal organization of the state. They had various financial relations to their lords. Some received half the produce of their farming labors; others paid a fixed rent; others were comparatively free laborers, and worked for wages. The object of the lords was to receive benefit from their estates in the most available manner, and it is probable that a great variety of regulations arose, governing the relation between the lord and the slave of the land. In addition to the serfs there were many free land proprietors, less privileged politically than the nobles. As above said, there was a double organization of the state: a set of civil institutes, the chance product of the relations between the servile land cultivators and their superiors; and the military organization of the aristocratic class. These two strands of the population, however, were by no means as completely separated as in Rome. There was a continual rise and fall, the natural result of the turbulent and unsettled condition of the times. For a long period, indeed, the land cultivators sank deeper and deeper into slavery. Many of the free sold their liberty for bread, others for protection; some were enslaved through their inability to pay fines; and others even yielded themselves as slaves to church estates, through a superstitious desire to benefit spiritually from the prayers of their priestly lords. On the other hand there was much manumission. The church used all its influence in this direction, and although it was the last to set free its own serfs it did much to ameliorate the hardships of their servitude and to free those of other proprietors. Gradually, as the Dark Ages were succeeded by the more civilized mediæval period, serfdom lost its worst features, and the position of the lowest class slowly grew more tolerable. Serfdom silently vanished, we hardly know how. In England it died out during the fourteenth and fifteenth centuries, without leaving a trace of the history of its demise. There had gradually grown up a large body of free laborers, who could take service where they pleased, and it is quite probable that many absconding serfs joined this class. Others became free through flight to the cities, where residence for a year and a day absolved them from servitude. Indeed, feudalism never became firmly established in England. The state organization was civil rather than military, and the power of the throne touched the people as well as the nobles. General laws, emanating from the head of the state, affected the agricultural population as well as their political superiors. No man was a villein in the eyes of the law. To all others than his master the serf was a freeman, and would claim the freeman's rights. Every step toward freedom gained by the serf became general rather than local, and was confirmed by law, instead of being left to the caprice of irresponsible despots. In consequence of this difference of national organization the story of the political development of England has diverged widely from that of France, and the parliamentary representation and system of general laws controlling the one state have replaced the kingly and aristocratic despotism and the system of class and local regulations controlling the other. This difference appears in the character of the great revolutions through which each state passed from its mediæval to its modern period. In England the revolution was a religious, not an industrial revolt; and its result was the establishment of religious liberty. In France the revolution was an industrial revolt, and its result the establishment of industrial freedom. By it the firm grip of feudalism was finally struck from the limbs of the state, and France completed its transformation from the condition of a military to that of a civil organization.

The slavery, however, into which the agricultural populations of the Middle Ages was cast, only partly extended to the artisans of the cities. Through all ages, down nearly to the present time, the scattered and uncombined field population of civilized states has been in a condition of real or virtual slavery. But the only marked instance on record in which the city artisan was reduced to the same condition is that of the Roman state, already alluded to. The densely concentrated and readily combined city artisans have always possessed a special advantage over field laborers in this respect, and thus they have in nearly every instance preserved a fair measure of liberty, while their agricultural contemporaries have often sunk helplessly into slavery.

In the feudal period most of the cities came under the control of members of the nobility, and many of their inhabitants were reduced into a condition of thraldom, though the proportion of freemen to serfs was probably always greater than in the country, and particularly so in commercial cities. The release of these city serfs from their state of villeinage was closely connected with the release of the cities themselves from feudal thraldom. The latter took place through a species of revolt, by which the cities became chartered subjects of the king and could call upon him for protection from lawless oppression. The decline in the liberty and population of the cities was arrested when this change took place, and a new and often rapid growth succeeded. No longer subject to plunder, they grew rich and populous. The inhabitants regained their partly subverted liberties and became free citizens of their municipalities, which as wholes gained some voice in affairs of state.

Much of the history of the Middle Ages consists in the story of the struggle of the cities to gain and preserve their freedom. But we are here concerned only with the internal relations of the citizens themselves. These were not the aristocratic conditions of the Roman civic communities, but formed partly democratic institutions, in which the members of all trades of a certain importance and all burghers of a certain fortune had a voice in the government, and were competent to take official part in the control of the city.

This influence of the craftsmen in the city governments arose largely from their tendency to combine into guilds or associations, many of which became powerful and highly influential. As the guilds played a very important part in the industrial history of mankind, some description of them is here necessary. The story of the mediæval period, indeed, is largely made up of the doings of the guilds, which played a part not only in industry, but in government, religion, charity, and nearly all other relations of society. They were very numerous, there being more than fifty craft guilds in Paris, while those of London numbered seventy-four, each comprising the members of a distinct trade. In addition, there were merchant and religious guilds; nearly the whole city society of the period being included in these various associations, whose regulations often became the laws of their respective cities. The guildsmen, in fact, had not only special privileges in, but frequently full municipal control of the seats of trade and commerce.

How early in human history such industrial organizations existed it is impossible to say, but there can be no doubt that merchants and craftsmen perceived at a very remote period the importance of protecting themselves by association against the tyranny of the rich and powerful. Societies somewhat resembling the mediæval guilds were numerous in Greece and Rome, and may have existed in the more ancient civilizations. We know that to-day they are abundant in China, and probably have been from immemorial times. Their purpose there, as in the west, is to keep up the rate of wages, to fix the price of merchandise, to defeat rivalry, and to aid the unfortunate. In India the retention of a more ancient industrial system, the communal association of labor, has rendered unnecessary the formation of labor societies. In fact, we may take it almost for granted, that wherever the primitive village or communistic system of labor gave way and was succeeded by individualism in wealth and industry, societies of workmen and traders were formed, for mutual aid in that new condition of affairs in which the strong triumphed, the weak went to the wall. As communism was the barbaric form of human industry, combination has been its civilized form, a condition which still exists, though it may finally be replaced by some new and more harmonious arrangement of industrial affairs.

The mediæval associations, or guilds as they were called, were more numerous and important than the similar societies of the ancient empires, and played a much more prominent part. In ancient times, indeed, labor was largely slave labor, and association was confined to the comparatively few free artisans. In mediæval times, though farm labor was partially enslaved, that of the cities was in great measure free, and in the story of the guilds we have a very important chapter in the history of human progress, the gradual rise of industry to importance, and the slow emergence of labor from its ancient condition of slavery to its present social and political prominence.

The guilds may be comprised in three general classes: the religious, the merchant, and the craft guilds. These, however, were much alike in their general objects, and embraced in single corporations purposes which are now distributed among many diverse societies. The religious guilds, which specially prevailed in England, added to devotional exercises the practice of Christian charity and of mutual aid of the guild brothers in every emergency, whether of sickness, accident, imprisonment, or death. They also relieved the sick and poor, and visited and comforted prisoners, even when not belonging to the society. Men and women of all ranks were members of these useful associations, and in some cases kings and princes did not disdain to join them. In that period of poverty and lawlessness they must have been of immense benefit.

The most interesting of the guilds, however, were those organized for purposes of trade protection. These, like the former, included aid to the unfortunate in their purposes, and used their funds freely for the relief of sick and indigent brothers and the burial of their dead. But their industrial and political importance went far beyond their social and charitable, and they played a very prominent part in ancient civic communities, most of whose inhabitants, indeed, were members of some of the numerous guilds. All the guilds were constituted on nearly the same model. They elected their own officers and formed their own regulations, were chartered by the crown, and took an active part in the watch and defence of the cities, while, as they grew rich and powerful, the municipal governments were framed largely in their interests. The "guild hall" was often the most imposing edifice in the city, their pageantries gave life to the greater cities, and they came in time to exercise a degree of tyranny which acted to hinder the natural development of the industrial vocations.

The history of the industrial guilds is the history of city life in the mediæval period generally. The conditions of industry then were widely different from those which now prevail. Instead of a few employers with great capital and numerous workmen, as at present, then nearly every artisan was, or expected to become, a master; work was mainly done at home with simple tools, and the employed workmen were principally the apprentices of these masters, who taught them not only the mysteries of the trade but the management of the business as well, it being understood that they would become masters themselves at the end of their term of apprenticeship.

If we go back to the earliest mediæval times, the conditions of industry become remarkably simplified. Not only the distinction between employers and workmen ceases to exist, but merchants fall into the same category. The masters in that era were merchants also, dealt in their own raw material, sold their own product, and held in one hand all the industries which now constitute such a variety of occupations. It was a primitive condition of civic occupations which could not continue when trade grew more expanded. Thus the merchants gradually became distinct from the masters, as it was found advantageous to separate commerce from manufacture, and at an early period they combined for mutual aid. These merchant guilds at first, however, embraced the principal craftsmen as well, and formed a general combination of industries. But between the ninth and the twelfth centuries they grew rich and exclusive, particularly in England and Northern Europe, and resisted the entrance of the "landless men" of the handicrafts into their organizations. Political power in the cities fell into their hands, and they exercised a degree of tyranny that was sure to provoke reprisals. This was not the case in the cities of Italy, or in London, where the craftsmen early asserted their independence, and formed guilds of their own which gradually took a part in the city government. Their example was followed at a later date by the craftsmen of the localities in which the merchant guilds were in power, and during the thirteenth and fourteenth centuries a severe struggle between the merchant and the craft guilds for supremacy took place. It was carried on with a violence and bitterness which at times broke out into actual war. At one place, in the fourteenth century, ten magistrates, members of the trade guilds, were burned alive. On another occasion a number of tradesmen were executed, and eighteen hundred citizens driven into banishment. Yet despite these partial successes of the merchant guilds the craftsmen grew steadily in strength, and in the end gained the upper-hand. The old aristocratic merchant guilds gradually decayed, and the orders of craftsmen became supreme in civic affairs. The craftsmen, who during the earlier period had been reduced almost to serfdom by the lords and merchants, thus rose to independence and power, and attained a prominence in municipal concerns much superior to any that artisans had ever held in the previous history of civilization.

But as commerce and industry continued to expand and capital to increase, new interests began to emerge and the old simplicity of conditions still more to disappear. A distinction between craftsmen and workmen gradually arose. Up to the middle of the fourteenth century there had been no special class of laborers as distinguished from masters. The apprentices graduated directly into masters, rarely working for any time as journeymen. There were exceptions to this in some few trades that required large capital, such as cloth manufacturing. In this there was a large body of workmen who had no hope of becoming masters; the guilds were those of the masters only, and the workmen formed unions of their own. Such a relation of capital and labor, however, was rare in the earlier period, though it grew somewhat general in the latter half of the fourteenth and in the fifteenth centuries. The master craftsmen were now becoming richer, serfs were crowding into the cities and forming a body of unemployed laborers, from whom workmen might be recruited, and the old trade guild became slowly converted into a guild of masters, who took active measures to keep the benefit of their business for themselves and their families. The length of apprenticeship was increased, restrictions were thrown in the way of journeymen who wished to enter the guild, and a vigorous effort was instituted to make the profits of each trade a monopoly of certain favored families, and to render it difficult for outsiders to enter the close corporation of masters. The guilds thus became exclusive societies of wealthy employers, and conditions like those with which we are now familiar appeared. Strikes took place, lock-outs occurred, arbitration was employed, and the series of events which exist to-day on a large scale were then common on a small one. The most prominent questions at first were those that arose within the guilds, between the masters and their apprentices and journeymen. With time the number of these increased, and three great points of dispute became prominent: the right to import cheap foreign labor, the number of hours of labor, and the rate of wages.

At first the compactly organized guilds had the advantage, and the masters gained full control of the rate of wages. But, as is above related, the men quickly began to combine also. These combinations were at first for mutual aid in case of sickness. But they soon became powerful, and began to fix rules in regard to rate of wages, hours of work, etc. In the disputes which followed, the men eventually conquered. The guilds were forced to accede to their demands. Not only the wages demanded were paid, but a half holiday, and then a full holiday, on Monday, was obtained; and to this was eventually added another holiday, when a saint's day festival occurred during the week. As these festivals were frequent, the days of weekly labor were virtually reduced to four. This continued till the Reformation, when the reduction in number of saints' days took away the excuse for the extra day's holiday.

Strikes, as we have said, took place in disputed cases. In some instances the men deserted the town in a body, and left its workshops empty, though generally the dispute was settled by arbitration. Yet when the men continued obdurate the masters were helpless. In the fifteenth century the prosperous trade of bottle makers in Nürnberg was destroyed by a quarrel. The men left the city in a body and carried the trade elsewhere, and Nürnberg had to depend on other industries. In North Germany the guilds held their own better, and on several occasions the workmen were foiled by a lock-out, the city gates being closed against the recalcitrant artisans. About every ten years such troubles were repeated, the men settling back into contented labor during the interval.

It was the sharp rivalry between the Continental cities in trade concerns, and the habit the workmen had of traveling from place to place, that gave the latter their advantage over the guilds. These causes did not operate so strongly in England, and in that country the masters retained the upper-hand to a greater extent. But the guilds had outlived their usefulness, and were destined to fall before the new conditions of trade and industry that were arising. The Reformation, which abolished the religious guilds in Protestant countries, shook the trade guilds as well. They suffered severe exactions, and the decay was thus instituted which has been hastened by the growth of capitalism. In France they were abolished in 1789. In Germany they gradually declined, their last remnants vanishing in 1869. In England they have long ceased to exist as industrial organizations, but in London the old associations still possess property of great value, the final disposition of which is a question of growing importance. Craft guilds still exist in the undeveloped countries of Europe, Turkey and Russia, the city occupations in the latter country retaining much of the communism which is the prevalent condition of the agricultural districts, and with which the guild relation closely harmonizes.

The development of the principle of industrial association here reviewed was a natural and inevitable one. Beginning with the harmony and simplicity of interests existing at an early period, there grew up a diversity of interests, and a hostility between merchants and craftsmen as the former became rich and tyrannical, which at a later period was succeeded by hostile relations between masters and workmen, as the masters became capitalists. In the modern period this diversity of interests has become greatly increased through the unfoldment of the factory system of production, and the struggle between labor and capital has grown tenfold more bitter and violent.

The old guilds, as has been said, tended to embrace a great variety of objects in a single institution. Trade relations, mutual benefit, charity, social enjoyment, religious observance, everything outside of military display, were combined. Such is far from being the case at present. These distinct purposes have been divided up among a multitude of societies, each with a single aim, and none claiming the powers of a patent medicine, warranted to cure all the ills that flesh is heir to. To name these numerous societies, or even their various objects, is beyond our purpose. It will suffice to say that every interest of self-help, mutual aid, insurance, charity, social enjoyment, etc., has its class of associations, so that a modern nation is a heterogeneous compound of minor groups in some one of which nearly every human interest is represented.

In all these associations, however, no new feature appears. Their diversity simply indicates the great variety and the sharp specialization of modern interests, as compared with the comparative unity of interests in the past. But in certain directions modern society has assumed new conditions, and given rise to associations devoted to important objects which were less sharply discriminated in former times. Reference is made here to societies for industrial and political reform. The trade guild of the past has been succeeded by the trade union of the present, an organization which is usually though wrongly regarded as having no direct analogue in ancient conditions, but as an outgrowth solely of the factory system of labor.

With the discovery of steam power, the invention of the steam-engine and of labor-saving machinery, and the establishment of the factory system of labor in place of the old home system, the mediæval conditions of industry disappeared and new conditions arose. Wealth grew enormous as compared with that of the past, and was no longer concentrated as of old in the hands of the nobility, but was largely applied to manufacturing purposes, thus sharply increasing the distinction between labor and capital. The guild vanished. The workmen found themselves helplessly exposed to a state of affairs which was not provided for in their old organizations. An inevitable expansion of industrial conditions had taken place, and they were not prepared to meet it. Everywhere the employers gained the upper-hand, and the men were at their mercy. Labor stood aghast. Its unions lost their industrial character, and became again benevolent associations, as originally. It was only at a later date that the idea of mutual aid in industry revived, and the trade union arose as the lineal successor of the old workmen's society.

This new form of association was bitterly opposed by employers, who attacked it in the press, in the legislature, and by every means at their command. But it has steadily advanced, despite all opposition, has forced legislative recognition, and is now a legally protected institution, and one of the most powerful forces of the modern world. The trade union is in general character, in purposes, and in modes of action a reproduction of the old artisans' association, but is much more extensive in its organizations and far-seeing in its management, in accordance with the vast expansion of modern interests and the great development of modern ideas.

In considering the present status of industry we are still obliged to preserve the ancient distinctions of agricultural and civic populations. The former class has, to a considerable extent, emerged from its old enslaved condition, yet not completely so. In France, where in feudal times the agriculturist was most utterly enslaved and ignored by the laws, the effects of the Revolution are seen in the fact that at present the rural population is not surpassed in condition by the peasantry of any other European state The land is the property of its cultivators, and the great estates of the past have become thoroughly broken up into the small farms of the present. A similar status of the agricultural population exists in the Netherlands, Denmark, Sweden, and others of the nations of Northern Europe, countries in which feudalism never became fully established.

In Italy the metayer system generally prevails. The farmers are neither tenants nor proprietors, but work the land on shares, dividing the profits of their harvests with the owners. This system, though inferior to that of the countries before mentioned, seems decidedly superior to the tenant system of Ireland, in which the agricultural population is reduced to a state of misery equal to that of farm laborers generally in mediæval times. In England the existing condition of the agricultural laborer is little superior to that of Ireland. The system of great estates prevails, less as a gift from the Middle Ages than as a modern institution. As a rule the farm laborer replaces the farm tenant or the farm owner of other lands, and exists in a state of degradation and misery which is but slowly yielding before the enlightened spirit of modern times.

Only in the northern region of the United States do we find a complete disappearance of the industrial distinction between civic and rural populations. In the Southern states this distinction continues to some extent, the slave population of the past being replaced by the peasant population of the present, while the former idea of the degradation of labor is but slowly dying out. The Northern states have no peasant population. The lands are worked directly by, or under the supervision of, their owners, and the hired farm laborer is on a level industrially and politically with the artisan of the cities. The old and long-sustained industrial distinction between rural and civic populations has virtually disappeared, and the two are interwoven with a closeness that admits of no dividing line. Education has invaded the fields, and intellectually the whole working population of the land stands at one level.

As respects the existing status of the artisan population of cities, it has, as we have said, utterly lost its mediæval stability. The institution of the guild has vanished before the conditions of modern industry. No stable and mutually satisfactory institution has yet replaced it. The world of labor is in a transition stage. Its old organization has died out. No coherent new organization has arisen. A feeling of uncertainty prevails. Industry is adrift between the firm shores of the continent it has left and those of the continent of which it is in quest. Meanwhile it is tossed upon the waves of discontent and revolt. What will be the result of this disturbed condition it is not easy to foresee. The great giant of labor is turning uneasily in its bed and shaking the world by its throes.

The trade guild of the past, as we have said, embraced all the interests of industrial life, such as questions of labor, mutual benefit, charity, social enjoyment, self-protection, etc. The trade union of the present is nearly confined to one question, that of wages, while the other interests mentioned are attended to by other societies. In this as in all other directions the old system has vanished, and its loose combination of interests has been replaced by the diversity of the modern world, in which each separate interest has its separate organization.

The instability of the conditions which now exist is evidenced by the hostile relations which attend them. Capital and labor are incessantly at war, and it is a doubtful question which will conquer in the great contest, or what will be the conditions of their final treaty of peace. The weapon of labor is the strike. That of capital is the lock-out. As in all war the results are mainly destructive. Personal misery on the one hand, financial loss on the other, are the only apparent consequences of the struggle. But it is evident that it must and will go on, until in some yet undecided way one side or the other shall gain a complete victory, or by a fusion of interests a permanent peace shall become established between the contestants.

Certain indications of what may be the future settled status of industry are apparent. One of these is the growing disposition to replace the strike and the lock-out by arbitration. The principle of mutual concession, which is looming up between nations as a wise substitute for war, promises to take the same position in the industrial world. The study of the laws of supply and demand, the disposition of some manufacturers to share the profits of their operations with their mechanics, the growing intelligence of the artisan class, and their gradual recognition of the true position of their employers and of the inefficiency of ill-considered strife, are all having their effects in the production of a more placable spirit, and a greater willingness to listen to the voice of reason. All sensible artisans are recognizing the fact that no industry can be made to pay more than a certain percentage of surplus earnings, that wages, interest and profit must be included within this sum, and that any effort to surpass this limit will defeat itself, both by increasing the costs of living and by inviting other labor or capital into competition.

Another indication of the future status of labor is seen in the tendency of the labor union to merge into a productive association of workingmen, and also in the tendency of the unions of the separate trades to combine into single grand unions, embracing all the artisans of a nation or of a continent. Manufacturing associations of artisans have been frequently established of late years, with failure in many instances, but with success in some. The successful ones have accumulated a large capital, pay good dividends, and are noted for the honesty of their operations and an industry in their workmen considerably beyond that of ordinary wage-workers. The most notable co-operative institution in England is that of the Rochdale Pioneers, founded in 1844. This, started by twenty-eight poor weavers with a capital of twenty-eight pounds, is now a rich and flourishing institution which adds manufacturing to its distributive interests. As a rule the English societies have been successful mainly in distribution, but their manufacturing endeavors are growing yearly more promising, and they now possess bakeries, corn-mills, boot and shoe factories, and other large industrial institutions. There are two wholesale societies, in Manchester and Glasgow, whose productive and distributive business are alike very large, and which own their own steamers for foreign trade. In 1888 England had in all 1,432 co-operative societies, with nearly a million members, and annual sales amounting to $170,000,000

The German co-operative movement began on a very small scale in 1840. Its principal direction has been in the founding of peoples' credit banks, but it is expanding into other fields. In 1885 there were in all 3,822 associations, with 1,500,000 members, a working capital of $200,000,000, and an annual business of $750,000,000. Since then these societies have grown with great rapidity, and they number at present (1889) 4,821. Of these 678 are productive, and 712 distributive associations, while there are 2,200 popular banks and loan societies. Other European countries display a spirit of enterprise in the same direction, and when we consider that successful co-operation is but forty years old, its progress may be looked upon as highly encouraging. In the future there will very probably be a somewhat rapid increase in number, diversity, magnitude of operations, and business wisdom in the management of such associations, and the time may come in which labor will settle its difficulties with capital by simply turning its back upon it, and becoming its own capitalist.

To this indication may be added that of profit-sharing, a recent industrial system in which employers divide a certain percentage of their annual profits among their employees. This system has been particularly successful in France, and is rapidly extending in other countries. Some establishments adopted it many years ago and have continued it successfully to the present day. Within recent years many others have undertaken it, and with such success that in certain cases the increased profit arising from the greater care and diligence of the men has fully covered their share of the proceeds, and left the profits of the employer undiminished. It has been proved that the workmen do more and better work, are more careful of the tools and machines and more economical in the use of the raw materials of their employers, and in every respect act as if they were working for themselves and with their own interests mainly in view. Strikes have almost ceased in such manufactories, and the future of profit-sharing is full of promise. As time goes on it is possible that the workmen's share may be increased, until profit-sharing will cease to differ essentially from co-operative enterprises.

The tendency to widespread combination of labor unions is another important feature in the situation. The time may come when each striking trade will be supported by the excess fund of the whole industrial population of a nation, or even of an international union of artisans. It is to be hoped that at the same time wisdom and judgment will be employed to prevent injudicious conflicts between labor and capital, and to arbitrate differences of opinion.

Side by side with this growing strength of the working hand is a similar growing strength of the employing head. Capital is accumulating with extraordinary rapidity, and becoming largely concentrated within single hands. The old battle of dwarfs threatens to be replaced by a war of giants. Yet as in the field of war, so in the field of industry the two sides have begun seriously to count the cost, and are more and more inclined to replace the heedless strife of the past by a submission to reason and a willingness to meet each other half way. Arbitration, division of profits, and productive labor associations are the directions in which the finger of industry now most promisingly points, and the paths by which a stable relation between labor and capital may yet be reached.

Yet we have by no means told the whole story of the recent labor situation. There are ideas afloat widely different from those we have described, revolutionary ideas which threaten to overturn the whole existing conditions of society, and replace them by a new state of affairs in which the relations of labor and capital will be profoundly modified. These are the ideas of Socialism, which are growing more and more prevalent, and which cannot fail to have considerable influence upon the future industrial relations of mankind. It is claimed by the leading socialists that individualism, as at present existing, is a false and unnatural condition, which cannot become permanent. Though it seems to us the natural relation of industrial affairs, it is really, in its present stage, the product of little over a century, has no true analogue in the past, and has produced an oppressive inequality in the distribution of the world's wealth which seems out of accord with the natural laws of society. In the far past communism was the general condition of industry. In the ancient empires there arose a tyrannical inequality, the product of war and superstition. In the mediæval period a condition approaching that of communism prevailed, but one in which individual enterprise was not restrained, as in true communism. In recent times a new autocratic inequality has appeared, the product of the great growth of capital, of modern laws of inheritance, and of a legal system which is a legacy to us from mediæval times. It is held by socialists that this, like the former inequality, is unnatural and must vanish, and that in the future society will be organized under a system of collective instead of individual capital and industry. Such are the arguments and the expectations of Socialism. It remains to describe the growth and present standing of this new theory of human relations.

The main purpose of Socialism is industrial reform, but it seeks to produce by political means what the trade union has sought to do by non-political agitation. The socialistic movement originated in Europe, as a prominent seat of political inequality, but has been imported to the United States, where it is gaining many adherents. The term Socialism embraces a variety of unlike schemes for the amelioration of labor and the equitable division of profits, and its propagandists advocate two widely different methods: one that of slow growth under the influence of public opinion, the other that of revolutionary overthrow of existing conditions, and their forcible replacement by untried industrial systems. The disciples of the latter method are more properly called Anarchists, and are the product of Russian Nihilism, whose principles, under the teachings of its apostle Bakunin, have been spread far and wide throughout Europe and imported by emigration to the United States.

France is the birthplace of Socialism. Schemes for a communistic reorganization of society were advanced by two French writers, Mably and Morelly, about the middle of the last century, and in 1796 a communistic conspiracy to revolutionize the government, organized by one Babœuf, at the head of a society called the Equals, was suppressed by the Directory. The true founders of Socialism, however, were St. Simon and Fourier, whose schemes, only in part communistic, were propounded in the early part of the present century and exercised an important influence upon society at that period. About the same time Robert Owen in England became a socialistic propagandist, and endeavored to put his ideas into practice by founding a communistic society at New Harmony, in Indiana. This attempt, begun in 1824, came to an end in 1832, after various plans of management had been unsuccessfully tried. The Fourierites also experimented in America, where they founded thirty-three communities or phalanxes, of which the first was born in 1842 and the last died in 1855. Etienne Cabet, a later French socialist, established in 1850 a socialist community at Nauvoo, Ill. This likewise has been unsuccessful, though a remnant of the society still exists at Corning, Iowa.

Another French theorist, Louis Blanc, made an effort to establish his system on his native soil, by the organization of national workshops for the industrial classes of France. During the Revolution of 1848 a series of such workshops were opened in Paris, in which one hundred and fifty thousand workmen were employed. These proved unsatisfactory, largely, as is claimed, from bad management, and were closed by the government after a brief trial. Of the more recent

English socialists may be named Maurice and Kingsley, whose "Christian socialism" did a good work in protesting against competition, promoting co-operation, and advocating ethical principles as necessary elements of industrial reform.

Since 1850 the socialistic movement has greatly declined in England and France, but it has been taken up with the greatest energy in Germany and Russia, in the latter country mainly in the form of anarchism. German socialism first became active in 1863 through the efforts of Lasalle, though it had some earlier disciples. Lasalle's system of "social democracy" fell, after his death, under the control of the celebrated Karl Marx, the ablest and most successful advocate of socialism who has yet appeared. To him we owe the political activity of the International Association, which was founded in London in 1864, and soon became a prominent and threatening compound of dangerous elements. Its original purposes were industrial only, but it quickly became political in its aims and perilous in its utterances. This association, composed of trade unions of England and the Continent, was organized with the object of holding annual congresses of workingmen in different countries, at which the interests of labor should be considered in their broadest application. Its declared purpose was the protection, advancement and emancipation of the artisan class, the organization of all workmen into one compact society, and a thorough discussion of all questions affecting the interests of labor. Below this, however, lurked a socialistic aim, tending to abolition of the wages system, the state control of all property, and the grading of compensation for labor on the illogical basis of time occupied, instead of on the rational basis of ability displayed and value of product.

There is no occasion here to review the history of the International. It will suffice to say that, in despite of the opposition of Karl Marx, anarchical doctrines were advocated within it, which divided it into two sections and quickly destroyed its influence. To these doctrines we owe the wild outbreak of the Paris Commune in 1871, with its brutal murders and destruction of property. Though the International Society is no longer visibly in existence, the socialistic ideas which it advocated are as vital as ever, and the party which sustains them is daily growing in strength, while its principles have been advanced and argued in numerous works which are adding largely to its influence. It has of recent years made marked progress in France, and has a considerable following in Austria, Italy, Spain and Belgium. In England and the United States it is growing with some rapidity. Its greatest progress, however, has been in Germany, in which land alone it has become an imposing element in the political situation. In 1887 the socialists polled eleven per cent of the whole German vote, and gained a considerable membership in the Reichstag, or parliament. Their vote in Berlin alone was nearly one hundred thousand. This was in despite of the fact that vigorous repressive laws against socialism had been passed, which undoubtedly hindered a large section of its well-wishers from voting in its favor. This large vote was enormously added to in the election of 1890, which gave the majority in the Reichstag to the liberal section.

Socialism has a strong footing in the German churches, both Catholic and Protestant, where it is organized under priestly leadership, and even the government is in favor of certain socialistic reforms. Bismarck's recent artisans' insurance scheme was a pronounced movement in this direction, while the emperor appears to favor, in some measure, the popular demands.

The socialist propaganda in Russia began about 1870. The Nihilist movement had arisen somewhat earlier, but in its first stage it had no political purpose, and contented itself with the propagation of atheistic ideas. It was followed by a revolutionary socialism, which bore its name, but was distinct from it in method and purpose. The effort of the government to suppress this new society and to prevent the spread of its opinions brought on the violent struggle that has since raged between the Anarchists and the authorities, and which reached its climax in the assassination of the Czar, on March 13, 1881. Up to the present time the Nihilist movement has been uneffective in producing political reforms, the government seeming stolidly determined not to yield.

It may be said in conclusion that anarchy is not advocated by rational socialists. The Anarchists have put themselves in the position of public enemies in all countries which they infest, are the bane of peaceful workmen as well as of governments, and are an excrescence upon socialism which is alien to its true purposes, and to which all peaceful and educated artisans are bitterly opposed.

Socialism, as it at present exists, is not communistic in its views, its latest exponents advocating a social condition in which all shall be paid according to the value of their services, not according to their needs. Its main purpose is the overthrow of capitalism, and the adoption of general co-operation, state production, or whatever other system will best do away with the strongly-declared individualism of to-day, and replace it by what is becoming known as collectivism, or the control of all capital and production for the collective benefit of communities.

CHAPTER XVI.

THE MIGRATIONS OF COMMERCE.

IN the industrial history of mankind the exchange of productions is quite as important an element as their cultivation or manufacture, and has had even more influence upon the development of national relations. History began with a condition in which each man consumed only what he himself produced or received from the hand of bountiful nature. It promises to end in a condition in which no man will consume that which he himself produces, and in which the labor of every man will be devoted to the needs of mankind in general, his own needs being mainly provided for by the labor of others. Such is the condition to which the inhabitants of civilized states have now come. Barter, from being local and narrow, has become general, and the record of its expansion is an important chapter of the history of mankind. The story is a long and involved one, and we can here simply outline it, giving the broad features of a landscape which is filled with infinite detail.

From a very remote era of the human period there come to us some slight indications of a system of exchange, in witness of the primitive origin of this natural relation of mankind. Thus sea-shells whose native habitat is in the Gulf of Mexico have been exhumed from the antique burial mounds of the north-western American states. In like manner the jade of China has been found among the relics of ancient man in Eastern Europe. In that remote period, however, distant commerce must have been rare, exchange generally being confined within the limits of tribes. The outflow of commodities over wide regions could have taken place only by exchange at the borders of adjoining tribes; by warlike invasions and seizure of valuables; and by migration of restless races with all their possessions. In some one of these modes every early wide movement of commodities must have been effected. Savage hostility and exclusiveness undoubtedly checked any active spirit of mercantile adventure.

But with the opening of the historical period we find that this hindrance to the growth of commerce had long been overcome, that nations had discovered the value of exchange, and that the merchant had become a privileged character, free to cross the borders of states which were otherwise mutually exclusive. The slow steps by which this privilege and protection of the merchant were gained are lost in the darkness of prehistoric times. The exchange of goods between tribes was perhaps at first achieved solely through violence, and it must have been long before the adventurous merchant was safe from the danger of a forcible seizure of his goods. But men learn wisdom by experience. The time inevitably came when it was perceived that a lack of security checked the inflow of desirable goods, and that freedom of movement to the merchant, protection of mercantile routes, and good faith in exchange of products, were absolute requisites to the regular reception of articles whose use had grown essential.

War is, in one of its most common phases, but brigandage on a great scale, and indicates a thievish propensity in mankind against which commerce had long to contend. Probably ages passed away in the slow establishment of commercial security, during which the rich rewards of trade tempted the merchant to risk all the perils of his vocation, and the decided advantages of peaceful exchange taught the tribes the value of good faith in mercantile transactions. Even long after this condition had been reached the dread of violence continued to display itself, probably with good reason. An instance in point is related by Herodotus, in reference to the Carthaginian commerce with Cerne, an island on the western coast of Africa. It was the custom with the Carthaginians to leave their goods on the shore, and to retire to their ships, since the timid natives could not be induced to appear on the beach while a sailor remained. The natives then brought elephants' tusks, skins, and gold, which they laid beside the goods of the merchants, and retired to their coverts, whereupon the Carthaginians again landed. If the bargain was not satisfactory the goods were left untouched until more gold had been added. Herodotus speaks of the good faith observed in these transactions. Both parties had apparently learned the folly of killing the goose that lays the golden eggs. Yet the Africans had probably good reason for their distrust in the well-known slave-making proclivities of these ancient merchants.

This story indicates one frequent feature of early mercantile transactions. Trade was in kind, goods for goods. No medium of exchange was employed. This, however, was not necessarily from lack of knowledge of such a medium, but rather from lack of the use of a common medium by the two countries. In fact the employment of some form of money must have been of very early origin, and its crude conditions are now found in many savage tribes. It was only necessary that something of a recognized value, not readily perishable, and easily transferable, should be employed as a standard of exchange. A great variety of materials have been thus used. The skins of beasts were early employed as money, and even recently furs have been used for this purpose in the trade of the Hudson's Bay Company with the Indians. Leather money is said to have been used in Russia as late as the reign of Peter the Great. With pastoral peoples sheep and cattle have served as money, corn and maize with agricultural tribes, tobacco with the early Virginians, and even ornaments, such as the wampum of the American Indians, and the cowry shells of the East Indies and Africa, have served the same purpose. Metallic money was in use at the earliest historical period of mercantile transactions, and records of the primitive use of silver currency are found in the book of Genesis. There we are told of Abraham paying for a piece of land with "four hundred shekels of silver, *current with the merchant,*" and of Joseph being sold for twenty pieces of silver to "a company of Ishmaelites (who) came from Gilead, with their camels bearing spicery and balm and myrrh, going to carry it down to Egypt."

There is considerable significance in the above brief records. They indicate an active commerce between separate nations, the ordinary use of money in exchange, the sale of land and of human beings as commodities, the prevalence of overland traffic, and the employment of the camel for the conveyance of the burdens of the merchant. It is probable that at the period of these transactions, traffic between the civilized countries of Egypt, Babylonia, Syria, and the region of Southern Arabia had become greatly developed; that it was principally an overland commerce, in which the camel had become invaluable as a beast of burden; and that the caravan travel of to-day in the same region is but a shadow of that which formerly prevailed there.

But there is no reason to believe that this land commerce was limited to the region mentioned. In all probability it extended far to the north, east, and west; the horse, the ox and the primitive cart perhaps replacing the camel in the upland districts. Land commerce thus extended until all civilized states, and many of the barbarian tribes, were included within its limits. And, as we have said in a previous chapter, this peaceful intercommunication between the natives of distant regions may have been a very efficient agent in the outflow of the ideas and habits of civilization; not only the products, but the customs, of civilized states making their way in this manner to distant localities. The settled trading agent, or the trading station established in foreign tribes, which was probably the early predecessor of the commercial colony, doubtless acted as an important agency in the inculcation of advanced ideas, which may by this method have spread far outward from their centres of origin.

To the primitive land traffic was early added water commerce, as a more effective means of distribution. River traffic, indeed, may have been of even earlier origin than its land counterpart, since the great navigable rivers of the first civilized states, the Nile, Euphrates, Indus, Ganges, Hoang-Ho, etc., offered an easy and available means of transportation. Down these streams, borne on the inflated skin-rafts of primitive navigation, and in boats whose origin also extends far into antiquity, the merchant floated, conveying his wares to distant markets. Probably at first a return by land was necessary. But human ingenuity in time devised the expedients of paddles, oars and sails, and thus man became able to contend against river currents, and move up as well as down stream. The invention of the last named expedient, the sail, together with an increase in the size of boats, opened the way to the last and most important extension of commerce, that over the far-stretching pathway of the seas. This invention achieved, commerce had passed its period of infancy, and was ready to enter upon that grand era of growth which began with the inception of ocean traffic.

It is doubtful if the commerce of the first period, that preceding the establishment of ocean traffic, was as extensive as many writers have surmised, or if any strictly commercial nations then existed. Though the deserts of Northern Arabia offered easy roads of communication between the early civilized states, yet the distances involved, and the need of using the camel's back as a means of transport, must have precluded the carriage of any but the lighter and more valuable commodities. It is not likely that there was much traffic in food products, except in cases of great necessity. Significantly, the periods mentioned in Genesis, when "all nations came to Egypt to buy corn," were years of famine. Most probably early commerce as a rule was confined to articles of luxury, and only occasionally included those of prime necessity.

Commerce beyond the limits of the desert plain needed easily traveled highways before it could become extensive. Perhaps the roads laid out by the march of armies at first sufficed for the journeys of the merchant. Protection also was needed from the lawless brigands who infested the pathways of trade, and the occasional plundering outbreaks of the tribes in the vicinity of these pathways. All the early conditions of nature and of nations thus tended to restrict the development of land traffic, to confine it as a rule to articles of small bulk in comparison with their value, and to hinder its rapid growth except within the limits of vigorously governed states. Yet the daring and enterprise of the merchant, which in all ages has been quite equal to that of the soldier, and from the same cause, the ardent desire for gain, undoubtedly induced a readiness to accept risks, and a vigor in the struggle with natural obstacles, which must have given rise to far extended mercantile journeys and daring ventures at a very remote period in the development of civilization.

For our earliest record of ocean commerce we must go again to the Hebrew Scriptures, that invaluable history of the ancient days of civilized mankind. Ordinarily the Phœnicians are credited with the first ventures in this direction, but the Biblical record appears to give that honor to the Babylonians, the active dwellers at the head of the Persian Gulf. Babylonia, indeed, was very favorably situated for the development of an extensive commerce at an early date. It lay centrally to the civilizations of that ancient period. It had safe water communication with the Arabian shores, and its vessels might have crept along the line of the coast even to far-off India and Africa. It possessed the level desert as a ready highway for caravan trade with Egypt and Syria. By the Euphrates and Tigris it could reach wide regions to the north. It bordered on the vast mountain region of Eastern and Northeastern Asia, and may have received the productions of India, and even of remote China by overland transport. Its position made it the natural carrier for the rich neighboring communities, and a central entrepot for the products of all civilized lands.

The main Biblical reference to Babylonia as a commercial nation may be found in Isaiah xliii., 14, where we read of "the Chaldeans, whose cry is in the ships." This passage is in agreement with many early cuneiform inscriptions, which speak of the "Ships of Ur." The ancient city thus named is known to have existed before 2000 B. C. Its supposed ruins are now many miles inland, but at that period it was probably situated at the head of the Persian Gulf, on the Euphrates, since this stream has long been depositing alluvial soil at its mouth, and extending the land rapidly into the sea. The remaining Scriptural references to the commerce of this region apply more particularly to Assyria, a later outgrowth from Babylonia. The prophet Nahum, iii., 16, says that the merchants of Assyria were multiplied like the stars of heaven. Ezekiel also refers to the Assyrian trade with Tyre. There are references in Greek and Roman writers which indicate a considerable development of trade in this region, originating probably in Babylonia, but gaining its fullest unfoldment in Assyria. This commercial activity had no counterpart in Egypt, India, or China, so far as we are aware. These countries may have had an active internal commerce, but there is nothing to show that they took part in external trade, the foreign traffic in their productions more probably being conducted by some enterprising intermediate peoples, such as the Babylonians and Assyrians. The eastern land traffic from the Euphrates valley is supposed by some writers to have extended as far as the ancient kingdom of Bactria, and reached its terminus in the great city of Bactra or Balkh, where an exchange of the goods of the west with those brought from India and China took place. However this be, it is known that Balkh was a great city at an early period, while its ruins to-day extend over twenty miles of territory.

Phœnicia, however, is the first country that clearly appears in history as a commercial nation. We have no positive knowledge of the origin of the Phœnicians. They were apparently a branch of the Canaanites, who settled on the Syrian coast of the Mediterranean, and quickly developed an active seagoing commerce. But tradition places them in an earlier home on the western shore of the Persian Gulf, in the vicinity of Babylonia. If we might venture to indulge in conjecture we should surmise that the early Babylonian traffic on the waters of this gulf was shared by the fathers of the Phœnician people, who either taught to or learned from the Babylonians the art of navigation. The rapid development of commercial habits and unusual display of maritime daring by the Phœnicians in their new home, indicates some earlier training in that direction, and goes to explain their choice of an infertile sea-coast region as their new location. If it was the harvest of the seas they sought. active land cultivation would have been but a distraction.

All this, of course, is conjectural, though not quite destitute of foundation. What we are sure of is that the Phœnicians, at a very remote epoch, as early probably as 2000 B. C., had begun to encounter the perils of the seas, and to send out their ships to collect the products of the maritime provinces of the Mediterranean. The centre of this early trade seems to have been the city of Sidon, which preceded the great city of Tyre in commercial importance. The trading spirit of Phœnicia manifested itself in both land and sea traffic. An extensive caravan commerce gradually arose, which in time reached to the southern extremity of Arabia, to Assyria, and probably to still more distant regions. The Jewish nation, in its prime, took an active part in this trade, to which we owe the growth of those stately cities of the desert, Baalbek and Palmyra, whose grand ruins still attest their ancient importance. Very probably this Phœnician overland traffic aided to awaken that commercial spirit of the Assyrians of which the Roman historians speak. Diodorus tells us of very ancient trading cities in Assyria, on both the Euphrates and the Tigris, which served as marts for merchants who brought to that country the commodities of Media and Paraetecene. The names of some of these cities are given by Strabo. Herodotus also speaks of Assyrian wares which, in very ancient times, were conveyed by the Phœnicians to Greece. He speaks, moreover, of a river traffic on the Euphrates, from Babylonia to Armenia. These scanty references are nearly all that remains in attestation of an overland Asiatic commerce which may have been very active and far extended.

But the most important part of the Phœnician commerce was that conducted by sea, over the waters of the Mediterranean, and also upon the Red Sea and probably the Persian Gulf. Apparently at first this trade was pursued with great timidity. The broad waste of the seas lay before these primitive navigators, never yet cut by keels of human make, and full of dreaded perils and supernatural terrors. Thus, daring as were the Phœnicians in spirit, they at first hugged the land closely, confining their adventures to the neighboring shores of Syria and Asia Minor. Gradually they reached in one direction the coast of Egypt and entered the Nile, and in the other direction touched upon the islands and shores of Greece, bringing to the intelligent natives of that land the products and ideas of Asiatic civilization. Perhaps the visits of Phœnician ships formed the first inciting cause to the later extraordinary development of the Grecian intellect.

The Phœnician traffic in time extended to the islands of the eastern Mediterranean, and at an early period reached the shores of Cyprus and Crete, with which an active commerce arose. These earliest daring ventures of human navigators into the depths of the unknown sea, out of sight of the safe mainland to which man had previously confined himself, form an interesting chapter of human history, of which, unfortunately, scarcely a paragraph has been preserved. When history fairly opens, indeed, the Phœnicians had gone far beyond these early timid steps, and had boldly made the whole broad Mediterranean their own. From Greece their ships had sailed to Italy, from Italy to Sicily, from Sicily to Spain, and had even passed the Pillars of Hercules, and dared the billows of the mighty Atlantic beyond.

The traffic which thus arose was such as the world had never before conceived of. All the productions of the North African and South European lands, the silver and gold of Spain, the tin and lead of Britain, and even the amber of the far-off Baltic shores, were brought to the Syrian coast and distributed among the inhabitants of the civilized nations of Asia. In return the luxuries of Asia were carried to the barbarian natives of these distant regions, who began to crave commodities of which their untutored souls had never before dreamed, and to be taught customs and become infused with ideas which slowly dispelled the cloud of barbarism in whose shadows they had so long lain shrouded.

By way of the Red and the Persian seas the ships of Phœnicia reached lands whose productions were of a very different type, the rich wares of Arabia Felix, of Ethiopia, and perhaps of far more distant shores, bringing home "the gold, silver, ivory, apes, and peacocks" of Tarshish, with probably other valuable commodities. The story of Solomon, as given in the Hebrew Scriptures, yields a vivid picture of the activity of the Phœnician navigators of that date, and of the use made of it by the luxury-loving Jewish monarch. According to Herodotus, they were bold and enterprising enough, at a later date, to extend their voyages until they reached the southern extremity of Africa, rounded the Cape of Good Hope, and circumnavigated that hitherto unknown continent. The enterprise and daring of the Phœnicians were, indeed, phenomenal. The Greeks and others who followed them were far more timid, seldom or never venturing beyond the limits of the Mediterranean, while the great feat of the circumnavigation of Africa was not emulated until two thousand years afterward.

The Phœnician, like all primitive commerce, had one feature that must have interfered greatly with its rapid development—the habit of piracy, and particularly that of kidnapping the natives of distant lands, for the purpose of selling them into slavery. This practice, however, was not without its good effect on the general progress of commerce. It caused such a distrust of the Phœnicians that for a time the ports of Greece were closed against them, a fact which must have aided the development of Grecian maritime adventure. They were also expelled from Italy by the Greeks and Etruscans, and were prevented thenceforth from establishing colonies on the Italian coast. The commerce which was thus lost was replaced by that of Etruria and Magna Greciæ.

In truth the Phœnicians seem to have never developed the true idea of the commercial colony. They planted trading stations in all lands to which their ships had access, but the object of these was simply to gather the native products of the land, or to keep the inhabitants at labor, in readiness for the occasional visits of the Phœnician fleets. The idea of the true colony, the establishment of a new home for the excess population of an old state, does not appear to have been conceived by this earliest of commercial nations. Of trading stations many were established in Sicily, Sardinia, the Balearic Islands, Spain and elsewhere. These formed centres for a later outflow of population, and gave rise to several important cities, some of which still exist. We may name Cadiz and Malaga as examples. The greatest outgrowth of Phœnicia was the city of Carthage, in Northern Africa, which was destined to carry down the commercial renown of the mother country to a much later period. This city, however, was not of commercial origin, but had its inception in political troubles, and in a consequent emigration of many of the wealthy and noble inhabitants of Tyre in search of a quieter home in distant lands.

There was one result of this commercial activity, to which we have alluded in a former chapter, and to which we can justly again refer, since it has had an important influence on the history of mankind. It gave rise to a city of a new type. The more ancient capital city, built to suit the caprice of a despot, or for convenience of government and military adventure, was now paralleled by the commercial city, growing in consequence of the profits of trade, not of rapine and tribute, and controlled in its location solely by the exigencies of commerce. It formed a new subject for human cupidity, from its great wealth and the unmilitary character of its vocations, and became a prominent point of attack in all subsequent warlike enterprises.

The riches of the Phœnician cities invited their destruction by the warlike and unscrupulous neighboring nations. Sidon fell before a Babylonian expedition, against which Tyre succeeded in defending itself. Subsequently this city also was captured and destroyed by Alexander the Great, and the history of Phœnicia came to an end after a commercial supremacy of fifteen or twenty centuries. In these warlike movements it is probable that more than mere plunder was intended. Very likely commercial jealousy had much to do with them, and particularly with that of Alexander. Greece, which was a part of his domain, was then an active commercial region, the greatest rival of Phœnicia; and we moreover find Alexander, immediately after the ruin of the older mart of trade, founding a new commercial city, Alexandria, at the mouth of the Nile in Egypt.

The supremacy of Tyre would probably have soon declined even if it had not met with this ruinous disaster; for the interests of commerce were shifting to new localities. Asia had ceased to be the centre of civilization. Civilized states had grown up in Greece and Italy, while the barbarian natives of the more remote west had greatly increased in their wants and in their productive skill, through their long contact with a commercial people. Several cities at an early date came into active commercial rivalry with Tyre, of which Athens and Corinth in Greece, and Carthage in Africa, were much the most prominent. To these we can but briefly refer. Carthage rapidly grew in importance, and entered into vigorous competition with its mother city. In time it conquered an extensive surrounding district, and ruled over a region of eighty miles in breadth, and fourteen hundred in length, from Cyrene to Numidia. This dominion, known as Africa, eventually gave its name to the whole continent. The Carthaginian dominion included maritime Spain, and the islands between Spain and Italy. The city became a busy manufacturing centre, while its shipping interests were even more extensive than those of Tyre. Its vessels went far beyond the straits of Gibraltar, along the European and the African shores, though how far it is difficult to say, since the extent of their commerce was kept a profound secret. It is related that in one instance the master of a Carthaginian merchantman, who was followed by a Roman ship intent to discover the port to which he was bound, ran his vessel ashore, and drew his pursuer on to do the same. He then lightened his vessel by throwing the cargo overboard, and got safely away from his pertinacious follower. He was commended, on his return to Carthage, for his patriotic service, and his losses were made good.

The Carthaginians, like the Tyrians, formed no true colonies. They established trading stations only, and jealously made their capital city the centre of all their vast business. The citizens devoted themselves solely to industry and commerce, mercenaries were employed to defend the state, and drafts of laborers were sent to Spain to work the mines more vigorously than had been done by the natives under Phœnician task-masters. Of their stations several formed the germs of modern cities, such as Barcelona and Carthagena in Mediterranean Spain, while Phœnician Gades or Cadiz, on the Atlantic coast, became one of their important ports. It is not necessary to describe the final fate of this great city of the past. It fell, not through the plundering greed, but before the military rivalry of Rome, and was swept away to make room for the colossus of the ancient world.

The activity, the importance, and the wealth of Greece were largely due to its commercial energy, which brought it into active rivalry with Phœnicia, and caused its chief mercantile cities of Athens and Corinth to teem with wealth. For a century and a half Athens monopolized the commerce of Greece, and largely expended the wealth thence derived on those noble public works which have made it the wonder of the world among cities. The commercial activity of Corinth was somewhat later in date, but was longer continued. This city became greatly celebrated for its wealth and luxury, to which the whole known world contributed, and for the activity of its manufacturing industries, particularly of its metal work, in which a high proficiency was attained.

The Greek navigators, energetic as they were, do not seem to have possessed the boldness of those of Tyre and Carthage. The enterprise of Greece was largely or wholly confined to the Black and the Mediterranean Seas, whose shores, however, became lined with colonies, many of which rapidly rose to great importance. This colonizing habit was greatly in excess of that of Phœnicia. The settlements originated, not as trading stations, but as true colonies, the adventurous outflow of a superabundant population. Of Greek colonies which probably began as trading stations we may particularly refer to Byzantium, from the great part in history it was afterwards to play, under its later name of Constantinople. It formed the central starting-point in a very extensive commerce which was kept up with the countries bordering on the Black Sea, being the terminus of caravan routes which extended to Northern Europe, Siberia and Circassia, and perhaps communicated with Persia, India and China, whose productions thence flowed into Greece. The city survived under its old name with various fortunes for a thousand years, when it was replaced by the great city which Constantine built on its site.

Several important colonies from Greece established themselves in Italy, from which thriving cities arose. These, as some conjecture, gave rise to the civilization and commercial activity of Etruria, which for a time brought the Etruscans into considerable prominence. The Greek cities, indeed, did valuable work in civilizing Italy as a whole, and in laying the foundation of the culture of the subsequent Roman state. Still more important was the great city of Syracuse, which in time became the capital of Sicily, and one of the most famous of all the Greek colonies. It was settled from Corinth, and gained through its active commerce a wealth and grandeur hardly second to those of Corinth itself. One other may be cited, whose commercial activity has not yet declined, the French city of Marseilles, which was founded by a Greek colony from Phoceæ in Ionia.

The migrating activity of the Greeks yielded equally important results in other localities, particularly in their colonies in Asia Minor, from which sprung the thriving cities of Miletus, Ephesus, Smyrna, and others. Of Greek colonial cities not above named may be mentioned Naucratis and Cyrene, both in Africa, Agrigentum in Sicily, and Tarentum, Sybaris, and Crotona in Italy. This active colonizing habit indicates a considerable advance in political ideas over the earlier days of commerce, and by its aid the civilization which had been confined to a narrow district around the head of the Mediterranean was spread over a wide region, from which the selfish policy of the Phœnicians had nearly excluded it. The ancient colony, however, differed from the modern in that there was no effort made to keep it in political vassalage to the mother country. It was left in complete freedom to make its own laws and establish its own government.

The commercial activity of the ancient world, which had grown from such a feeble beginning to such great proportions, had difficulty to sustain itself against the military spirit of Rome. One after another of its ancient centres vanished, or lost their prominence, before the destructive march of the Roman armies. Carthage, Corinth, Byzantium, Palmyra, and other cities sank into ruin. Athens remained but a shadow of its former self. Alexandria, which had grown into a rich and flourishing commercial centre under the fostering care of the Ptolemies, alone remained prominent, as the chief commercial city of the empire. The city of Rome opened wide its ever hungry mouth, and swallowed the products and the wealth of all the world. Yet it never became a commercial city in any proper sense. It was merely a depot for the reception and consumption of the produce of other regions. It produced nothing and distributed nothing. Commerce, in any activity, was confined to outlying marts of trade, the languid seats of the older spirit of exchange.

In fact the capital city had again come into overshadowing prominence, and no commercial rival was permitted to grow into importance. Rome was the governing centre of the world, into which the productions of civilized mankind flowed as tribute. Most of the active commerce of the ancient world had existed in partly or wholly republican states, in which no stronghold of a despot could arise. But when a despotic city gained control of the world, commerce declined and tribute took its place. There was not room enough for the two opposing forces, and commerce lost its activity when despotism again prevailed.

The state of affairs which succeeded the fall of Rome was repressive to commercial activity. Western Europe, indeed, sunk again into the barbarism from which it had partly emerged, and for centuries commerce resumed its primitive condition. In the East, however, considerable commercial activity prevailed, Alexandria and Constantinople being the two leading mercantile cities. The latter city kept up a land traffic with Northern Europe, and trade with the far East was still sustained, though with difficulty, hostility of the nations in its path rendering it precarious.

The Arabian outbreak in the East, which overflowed the old civilized regions of Syria, Mesopotamia, and Persia, and extended over all Northern Africa, proved advantageous rather than detrimental to commerce. A single empire now reached from India to the Atlantic, throughout which merchants could move without danger or restriction, while the rapidly attained civilization of the Arabs developed a market for all the precious and useful productions of the world. Wealth in all its forms flowed profusely into this empire from the most distant lands, an extraordinary luxury was indulged in, and populous towns and great cities dotted the realm from east to west. Bagdad became an active commercial centre, Damascus grew rich through the profits of trade, flourishing cities arose in Persia, Balkh renewed the commercial activity which it is supposed to have possessed at a much earlier date, and caravan routes extended through the desert to Siberia and China, and through Bactria to the distant towns of India. The ocean commerce was equally extensive; the whole coast of East Africa was visited, the shores of Ceylon and Farther India were reached, and far distant regions were opened to trade whose very names were unknown to the civilized world of the earlier period.

In Egypt Alexandria retained much of its old activity, while on the North African coast arose Kirwan, Fez, and other important cities whose caravan trade extended to Asia and far into Central Africa, and whose vessels visited most of the Mediterranean ports. In Spain industrial and commercial activity were equally encouraged, numerous populous cities sprang up, and Cordova, the capital, became one of the most prosperous and splendid cities the world had ever known. Yet during this extraordinary activity of a people who a century or two before had dwelt in inert barbarism in the depths of the Arabian desert, Europe continued in savage turbulence, and was enveloped in a mental gloom which it seemed as if no light could penetrate. Industry had been slain by the iron hand of war, and the feeble form of commerce trembled in terror before the titled brigands who were the curse of the land.

The first indication of energy in European commerce outside of Spain was manifested in a locality happily removed from the warlike violence and feudal ferocity of the new-growing states. It was in a city of the sea, Venice, built upon the half-drowned isles of the Adriatic, that the eagle of commerce again spread its wings, and resumed its long-checked flight. The early Venetians were a half-amphibious people, whose very city was anchored in the sea, and to whom the ship's deck was a native home. Their vessels rapidly increased in size, they became expert and daring sailors, and in time began to contest with the Arab fleets the commercial empire of the sea. The salt of their lagunes and the abundant fish of the neighboring waters had been their earliest articles of trade, but they soon displayed a more ambitious spirit, and by the end of the fifth century were already known in history as a commercial people. It was, however, during the period of Arabian ascendency that Venice expanded into the commercial metropolis of Christendom, and brought the rich wares of the East to spread them throughout stagnant Europe.

The Crusades gave a great impetus to the commerce of Venice, whose ships were kept busy in conveying soldiers and pilgrims to Palestine, and in bringing valuable cargoes home. This commerce reached its acme in 1204, when the fourth Crusade, carried in Venetian transports, turned aside from its true aim to the capture of Constantinople. The chief part of the spoil fell into the hands of the Venetians, and they gained possession of the Peloponnesus and the adjacent islands, which they long retained. Venice had for centuries been depriving Constantinople of its profitable trade with Europe. It now held the greater part of the active trade of the world, having no worthy rivals except the Jewish and Arab merchants of Spain, who kept up an active commerce with the Saracen ports of the East.

But Italy was now rising out of the "slough of despond" of the Dark Ages, and regaining some of her ancient energy. Several of her coast cities came into maritime rivalry with Venice. Genoa in particular grew actively commercial, and in 1261 aided the Greeks to regain possession of Constantinople, and to banish the Venetians from that city and the Black Sea. A maritime war between the rival cities succeeded. Venice opened commercial relations with Alexandria and other Saracen ports despite ecclesiastical censure, overthrew the Genoese in a great naval battle, and regained the trade of the Black Sea. The subsequent capture of Constantinople by the Turks put an end to enterprise in that direction, but the Venetians were still supreme in the Mediterranean, their ships traded with the Atlantic ports as far north as England and Holland, and a valuable overland traffic was kept up with Italy and Germany. The city grew enormously wealthy, while the mud hovels of old were replaced by the marble palaces which still crowd the borders of its liquid streets and make it the modern marvel of cities.

Other cities of Italy vigorously competed for a share in this traffic. Genoa and Pisa were the most active of these rivals. Between these cities a constant rivalry existed, which ended at length in a fierce war and the destruction of the Pisanese commercial prosperity. The jealous Genoese in their turn succumbed to Venice, and their active commerce came to an end before the close of the fourteenth century. The remaining more important commercial cities of Italy were Florence, Amalfi and Ancona, each of which for a time possessed a valuable trade.

The prosperity of these cities, however, was not confined to commerce, since their manufacturing industries were also active. The glass and metal work, the woolen and silken fabrics of Venice, were unsurpassed for beauty and richness, while Florence became one of the most important of manufacturing cities, and spread its scarlet cloths, its silk fabrics and tapestries, its jewelry, and its varied artistic productions, through all the lands of Europe.

During this period the other nations of Europe were not inactive. A considerable trade was kept up by the ports of Spain, Portugal, France, England and the Netherlands. This commerce, however, was unimportant in comparison with that of Venice. The future rivals of the city of the sea were yet in no condition to compete with her for the commerce of the world. But a more dangerous competition arose in a region still farther to the north, a land the latest of Western European realms to emerge from barbarism, the German shores of the Baltic. The celebrated Hanseatic league, which was formed by the cities of this region, became so important that it merits special attention.

There had long been an active overland trade through Germany and Russia with the south of Europe, the raw materials of these regions being conveyed, first to Constantinople, and afterward to the Venetian ports, and exchanged for the luxuries of Southern Europe and Asia. At an early period, too, the hardy dwellers on the Scandinavian shores had manifested maritime enterprise, and sailed into unknown seas with a reckless boldness which the navigators of the Mediterranean had never displayed. The thronging fish of their seas may have been the first exciting cause of these voyages, but nobler game than fish soon attracted their daring fleets. The piratical boats of the Saxons descended in a cloud on the shores of Britain, and seized the fair jewel which had just fallen from the hands of Rome. Later came the Danes like a flock of ravenous sea birds, to claim their share of the spoil. The Normans followed, and seized the coast region of France. At a later date others of their fleets entered the Mediterranean, and made their northern vigor felt on all its shores. Their aim was piracy—one of the leading aims of all early navigators. It is, indeed, only within modern times that this bane of commerce has been swept from the seas. Through all the commercial period, from the early days of Phœnicia until a century or two ago, the ocean has been a nest of robbers, and the adventurous trader has had to fight for life, liberty and fortune against the lawless rovers of the waves.

Merchants, from the first days of foreign commerce, were obliged to go armed and in company on their trading journeys, whether by land or sea. We are told that the German traders traveled in company, with swords hung from their saddle-bows. The richer cities of Germany maintained bodies of soldiers, who formed part of the imperial army in times of war, and defended the merchants in their commercial journeys in times of peace. These cities eventually formed leagues for mutual protection. Three such leagues are of historic note: the Rhine league, of which Cologne was the leading city; the Swabian league, which became quite extensive, and included many flourishing industrial and commercial cities; and the Hanseatic league, which played a highly important part in mediæval commerce.

The towns of the Hanse were mostly sea or river ports, and their trade maritime. Their combination was against sea rather than land robbers, and particularly against the pirate rovers of Denmark, who made the waters of the Baltic dangerously insecure. The earlier members of the league comprised about a dozen towns, of which Lubeck was chief, while Bremen and Hamburg stood next. Its trade was at that period confined to the Baltic, but it soon extended into the outer seas and reached the Flemish and English coasts, while other cities came in succession into its compact.

The word *Hansa* (guild or corporation), was that given to the guild of merchants which arose among the traders of these towns, and which finally embraced nearly all the merchants of North Germany. It was at first a union of German merchants stationed in foreign ports, the most important of which stations were London, Wisby, the capital of Gothland, Bruges of the Netherlands, Bergen in Norway, and Novgorod in Russia. This union of the Hanse merchants abroad became in time a league of the Hanse towns at home, of which we first hear in the year 1330. A large number of cities, in addition to those named, eventually joined the league, which became a powerful political force in North Germany, and added warlike energy to its trading enterprise. The piracies of the Danes, indeed, brought them into constant conflict with the Hanse towns, and a desultory war arose, with varying fortunes, which finally ended in Denmark becoming subjected by and made tributary to the powerful league.

The foreign trade of this vigorous mercantile combination became in time very great, and the activity of its ships and exclusiveness of its regulations did much to repress the commercial energy of the countries to which its trade extended. It had the trade of Russia in its hands, and Novgorod expanded into an important city. With Sweden and Norway it kept up a busy traffic. On the Atlantic coast it traded with most of the towns of the Netherlands and with several French and Spanish cities, while in London it had a thriving and important settlement.

Its supremacy continued until the opening of the sixteenth century, and then slowly declined. There had long been dissension and jealousy between its principal towns, and the wars which it was compelled to wage decreased its strength; yet it held its own against all these difficulties until the English and

Dutch towns began earnestly to contest its supremacy, and to demand their share of the empire of the seas. In the reign of Elizabeth the Hanse merchants of London were deprived of their special privileges. The activity of the Dutch fisheries brought Holland into earnest competition. The terrible disasters of the Thirty Years' War completed the ruin of the league, whose last general assembly was held in 1669.

It had played a great part in the history of the North, and did much to further the unfoldment of German civilization. By its alliance with the Teutonic Knights a powerful bulwark was formed against the aggressions of the barbarian Slavonic and Scandinavian populations. Security and peace, both on shore and at sea, were gained by the efforts of this powerful confederation. Pirates and brigands alike were put down, the lawless nobles kept in check, and even princes taught due respect for the rights of property at a period when justice was an almost unknown word. A code of maritime laws was also gradually evolved, which regulated for centuries the commerce of the European seas. Altogether the Hanseatic league was a most efficient agent in the development of the civilization of Europe.

With the decline of the Hanse mediæval commerce ended and modern commerce began. It was an eventful period in human history. With phenomenal suddenness the trade of the world fell into new hands, a remarkable spirit of maritime enterprise awoke, the perils of the most distant oceans were dared, and a new chapter in the annals of mankind was opened. Confidence in the indispensable instrument of the navigator, the mariner's compass, once fully established, men boldly left the land far behind their ships, and dared the dangers of unknown seas. The Portuguese, the Spanish, the English, and the Dutch almost simultaneously broke through the barriers of the unknown, and sailed in quest of new worlds afar.

Early in the fifteenth century the Portuguese began their daring southward voyages, moving step by step along the African shores, until, in 1486, the ships of Bartholomew Diaz rounded the Cape of Good Hope, and entered the waters of the Indian ocean. Eleven years afterwards, in 1497, Vasco de Gama repeated this feat, and sailed through seas which for two thousand years no keel had cut, until he reached the distant Indian shores, the Golconda of European trade.

It was the death blow to the supremacy of Venice, which hitherto had remained almost without a worthy rival in distant commerce. It also brought to an end the long monopoly of the Arabs, who had been the commercial intermediaries between India and the west. A water-way to the land of gold, diamonds, and spice was at last found, and commerce shifted from the inland seas to the Atlantic shores. It had been for two thousand years slowly moving westward over the Mediterranean channel, stepping from city to city, until from its early home in Syrian Tyre it finally set its foot in the modern city of Lisbon, on the coast of the broad Atlantic.

Almost simultaneously a yet bolder mariner, Christopher Columbus, under the auspices of Spain, sailed due westward in daring defiance of superstition and geographical prognostics, and found a new world sleeping beyond the seas. The fortune of being the first to open the doorway to the hidden lands of the earth gave Portugal and Spain a long pre-eminence in commerce. The pope, with a magnificent generosity that it was cheap and easy to indulge in, divided the new world between these two competitors, without giving a thought to the claims of its original owners. Eagerly went forth the ruthless crews to take possession of their rich heritage. Portugal seized the waters of the east, and for nearly a century permitted no foreign keel to ruffle the surface of the Indian ocean. Spain grasped the gold-bearing realms of Southern America, and crushed the natives in her iron grasp, in a mad effort to force every ounce of gold from their trembling hands. Neither nation benefited by the monopoly thus attained. The rich wares brought by Portugal from the Indies were spread throughout Europe by the enterprise of other states, and yielded little advantage to herself. The gold brought home in Spanish ships was not used to develop Spanish resources, but was wasted in useless wars, or passed to other nations in exchange for commodities which Spain would have been far more wise to make for herself. The gold which had been wrung by torture and murder from the inhabitants of ruined empires flowed away from Spain almost as rapidly as it entered, being partly spent in the futile effort to rivet the chain of Catholicism on Protestant Europe, partly in purchase of articles of immediate consumption which left no wealth behind. The gold vanished, and Spain was poorer than before.

Other countries strove for a share in the riches thus made free to the hands of commerce. England and

Holland became particularly active in this effort, the former planting the most successful colonies the world has ever known, the latter developing a trade which placed the Dutch nation at the head of the world's commerce. This expansion of the trade of Holland must now be considered, as the next important event in the history of mercantile adventure. As Portugal and Spain had succeeded to the trade of Venice, so the commerce of the Dutch commonwealth grew apace as that of the former states declined and vanished.

The commercial history of the Netherlands is a highly interesting one. These "lowlands" not only front upon the waves, but Holland is as truly a capture from the sea as was the city of Venice, and its half-amphibious inhabitants, like those of the "Queen of the Adriatic," took early to the ocean as their native realm. Commerce was to them a necessary means of life, manufacture naturally accompanied it, and the Netherlandish region very early broke into an active industry which was unexcelled in Europe. Even in the days of Charlemagne their woven stuffs had become noted. Between the ninth and the thirteenth centuries numerous towns sprang up, several of which were destined to play a striking part in history. Their fisheries were early active, their mariners bold and enterprising, and the Norse sea-robbers found it convenient to avoid these lowlands of the north, and pay their respects to less sturdy southern peoples.

Bruges, in the south Netherlands, was the first city to rise into importance. It was the emporium of the Hanseatic league, and a busy trading and manufacturing town, which had a population of 200,000 as early as 1300. Ghent also rose into importance early, and at one time was equal to Bruges and Antwerp in population. But Antwerp was destined to become the greatest trading city of the Flemish nation. It gained a great part of the declining trade of Bruges, its manufactures in woven fabrics and metal work became widely celebrated for quantity and richness, and wares flowed into it by land and sea in such profusion that it in time became known as "the market of the world." It reached its highest development at the period of Portuguese supremacy, when its ships monopolized the trade in the rich wares brought from the East Indies to Lisbon, and it formed their distributing centre for the remainder of Europe. Its harbor often held as many as from two thousand to three thousand ships at once, its warehouses were overflowing with the wealth of the whole accessible world, its workshops were nowhere equalled in the profusion, value and variety of their products, and its population reached nearly a quarter of a million. It was on this rich and thriving city that fell the insensate fury of Philip II. of Spain, and the prosperity of the "world's market" was destroyed at a blow, simply because its inhabitants were not ready to accept their religion ready-made at the hands of the bigoted Spanish monarch. He had the royal satisfaction of crushing the richest city in his dominions, and of sacrificing a most valuable portion of his revenues at the shrine of his gloomy deity. The commerce of Antwerp fled to Leyden and Amsterdam, while grass-blades in the streets succeeded the masts in the port of the ruined mart.

Amsterdam, the chief among the many thriving ports of Holland, was in the year 1300 but a mean fishing hamlet, seated in a desolate marsh. From this beginning in less than a century it rose to be an important commercial centre. In 1472 it severed its connection with the Hanse towns, and from this date its commerce grew with redoubled rapidity. The city was absolutely destitute of agricultural resources. It was built upon piles, driven into the mud of the marsh. Canals surrounded it, and the sea flowed through its streets. It was, in short, a Venice of the north, and had to depend upon the ocean for its life. But this watery field of tillage was thoroughly cultivated. The products of the wide world poured into its warehouses; "and the fleets of its merchantmen, as seen from the ramparts, lay so crowded together that vision was intercepted by the thick forest of masts and yards." The bountiful fisheries of the northern seas were the earliest source of this growing prosperity, but the commercial vision of Amsterdam soon extended to new regions, and singularly enough the wealth of Spain, which country was so vigorously seeking to destroy the prosperity of this semiliquid realm, helped to foster and sustain its growth, and the mines of America were wrought far more for the benefit of the Netherlands than of Spain.

The most rapid development of Amsterdam took place during the period of the Spanish war, when the troops of the Duke of Alva and his successors were destroying the cities of Flanders, and driving their skilled inhabitants north in search of a secure home. Lisbon, from which so much of their trade had come, was finally closed against the ships of Holland by the hands of Philip II. This action, which was intended to be disastrous, was the turning point in the fortunes of Holland, and the event which brought the Dutch merchants to the head of the world's commerce. The closing of Lisbon stirred the enterprising Dutch navigators to open for themselves the way to the East Indies. Several vain efforts were made to find a new route to the east by the icy seas of the north. Failing in this, the Dutch ships boldly sailed south, and succeeded, in the last years of the sixteenth century, in reaching the Indian shores, whence they returned with costly cargoes of the spices and other rich products of the East.

Their success in these efforts inspired the Hollanders with enthusiasm. They determined to contest with Portugal and Spain the empire of the newly-discovered world. One of their fleets crossed the Atlantic, explored the Hudson river, and laid the foundations of the city of New York. Another circumnavigated the globe. Many others sailed for the eastern seas by the South African route, where they came into hostile contact with the Spanish and Portuguese fleets. The victory in these contests remained with the Dutch, the shores of India and the Spice Islands were eagerly swept of their valuable productions, and while Spain and Portugal sank from their high estate, Amsterdam rose to the position of the commercial metropolis, and Holland became the richest community in Europe.

The establishment of the Dutch East India Company, the seizure of the spice-producing islands, and the incessant activity with which the eastern trade was prosecuted, formed the sources of this prosperity, and for many years the dividends of the company ranged from ten to more than fifty per cent. on its capital.

With this wealth it kept in its pay an army and navy that set at nought the efforts of the Spanish and Portuguese fleets, and preserved intact its new-gained empire of the east. A West India Company was also formed, whose profits were as great, if not as legitimate; for these profits were largely the result of descents on the Spanish settlements and capture of their silver fleets, and also of an extensive traffic in negro slaves. The protracted war with Spain still continued, and these profitable expeditions were warranted as means of obtaining the sinews of war from the coffers of their deadly foe.

During the eighteenth century Holland's commercial supremacy gradually declined. This was partly the result of war, but more particularly of the activity of commercial rivals, who came successively into the field. All Europe was now fully alive to the profit to be derived from commerce, and France, England, and Germany energetically sought to share this wealth. France exhibited a vigorous colonizing spirit, and many of its cities gained a prosperous trade. The cities of North Germany, also, which had declined since the decay of the Hanseatic league, grew again commercially active, and Hamburg and Bremen in particular regained a considerable commerce. But it is to England that we must look for the true successor of Holland, and the heir to the commercial supremacy of the world. After the long series of changes in this supremacy which we have detailed, it fell into the hands of the English people, by whom it is still retained.

The commercial history of England is a long and highly complex one, at which we can but briefly glance. During all the early periods of English history there was little evidence of commercial energy, and trade was mainly conducted by the ships of foreign states. Not until the reign of Henry VIII. did British maritime enterprise begin to declare itself. It was particularly promoted by Elizabeth, who, on account of the exclusive policy pursued and the restrictions upon English trade imposed by the Hanseatic league, closed the Hanse factory in the Steel Yard of London, and at once removed the great check to the commercial enterprise of her realm. The privileges of foreign merchants were taken away, foreign vessels were forbidden to enter English harbors, and many monopolies were granted to encourage the enterprise of British subjects. These monopolies, indeed, proved hurtful to trade, and were quickly removed, but even during their existence British trade rapidly increased. The daring mariners of England explored all seas and visited every known shore. The circumnavigation of the globe was repeated by Drake and Cavendish. But the distant commercial enterprise of this period was rather in piracy than trade, as in the earliest sea-going history of almost every nation. Descents were made on the Spanish settlements in America, and the rich galleons of Spain were captured and plundered, without regard to the fact that peace existed between the two countries. In indication of the spirit of the time it is notable that the pirates, on their return, were received with high honors, and the remonstrances of Spain haughtily contemned.

From this time forward the legitimate trade of England increased with great rapidity. Shipbuilding became an active industry. Companies were formed, and a large capital was accumulated for the furtherance of trade. Every sea became a channel of English enterprise, and the long impoverished island suddenly sprung into wealth, while plenty and splendor succeeded the sparseness of former times. The preëminence of Holland, however, was not easily overcome, and the unquestioned commercial supremacy of England was not established until the period of the revolution in manufacturing industry which followed the invention of the steam-engine, and the replacement in labor of human arms by arms of steel.

One important source of the success in commerce attained by England was the extraordinary colonizing ability which she displayed. In every land on which she set her foot thriving settlements arose, several of which were destined to grow into important states. The marked feature of these colonies was that they were devoted to the development of the resources of the countries which they occupied in a degree not equalled by the colonies of other modern states. Their object was not to wrest gold from native hands, or to deal in the products of native toil, but to possess and cultivate the land, and to supply new stores of raw material to English manufacturing skill. They also manifested an aggressiveness not elsewhere equalled. The French were driven from America and the English seized the whole vast region between the Mexican Gulf and the Arctic seas. The same spirit was shown by the East India Company. Every rival was forced from the rich peninsula of Hindustan, which, with its hundreds of millions of inhabitants, was subdued by a handful of adventurers, and a new empire added to the English crown. In Australia still another empire arose. Everywhere, indeed, this aggressive spirit has displayed itself, and the colonies of England to-day stretch around the world.

England seized the sceptre of commerce at a fortunate epoch. Its reign began at the date of the replacement of hand labor by power labor, and the consequent manifold increase in the productive ability of the world. The quantity of material to be carried grew enormously, and the old sailing vessels and caravans would soon have proved utterly inadequate to move the vast mass of goods now produced. Fortunately at this period two grand discoveries were made, steam locomotion on land and steam navigation, the one replacing the camel and the horse of the old caravan, and the other the sail of the ship, with machines of enormously greater power and speed. They came just in time to meet the increased pressure of production, and the problem of the needed carrying capacity of the modern world was solved by the use of the same power which produced this need.

The commerce of the past has been thrown utterly into the shade by the enormous commercial activity of the present century, in which more material is moved in a day than in a year of ancient times, while the continued growth of the carrying trade of the world is such that the record of each year now considerably surpasses that of preceding years. Out of the vast array of statistics that apply to the subject it must suffice to adduce one illustration of this recent rapid growth. In 1826 the aggregate value of exports and imports of the kingdom of Great Britain was £88,758,678. In

1876, fifty years afterward, the aggregate amounted to £631,931,305. In half a century commerce had increased seven-fold.

The commercial supremacy of England still continues, but it is no longer an unquestioned or unopposed supremacy. Other nations, which had lain in a state of partial dormancy, are now coming energetically into the field for a share of the spoils, and it is quite possible that the control of the domain of commerce, which has changed hands a dozen times within the last three thousand years, may ere long shift again, and England fall back to a second place in the field of trade. Among her most energetic rivals to-day is the greatest of her colonies, the United States of America, which is coming forward as a contestant for the carrying trade of mankind, and has already developed an enormous internal and external commerce. With the problem of the future of commerce, however, are closely bound up some other questions, which have recently risen into prominence, and with a consideration of which this chapter may fitly close.

To the two ancient civic types, the capital and the commercial city, the modern world has added a third type, the manufacturing city. It is one result of the gradual differentiation which has taken place in all human affairs, from the original simplicity and concentration of interests to their modern diversity and unfoldment. Before speaking further of it, however, it may be well to allude to a peculiar form of the commercial mart, of some importance in mediæval history and a natural product of the development of trade, the city of the great fair. Civic market centres appear to have had their origin in religious gatherings, which attracted dealers with their wares. The fairs were at first held in the church-yard or its vicinity, at the period of the religious festival; but their importance rapidly dwarfed that of the occasion to which they owed their origin, and they became immensely expanded in the mediæval era. A brief description of them may be of interest.

Winchester, in England, held a great annual fair, which attracted buyers and sellers from all Europe. In France Beaucaire was the principal market centre, and its fair was at one time the largest in Europe. It is still kept up. Fairs were also held at Montpellier and Troyes. The Troyes fair grew quite important, and the system of weights employed there became adopted as a standard, which is still in use under the name of the Troy weight. In Germany important fairs were held at Leipsic and Frankfort. At the former city there were three fairs held each year, which are still sustained, though they have lost much of their old importance. These fairs were great occasions in the mediæval period. Merchants brought their wares from remote distances, hundreds of thousands of dealers gathered, and an immense quantity of goods changed hands.

The fair city was a special type of the commercial centre, adapted to the conditions of a rude age, and naturally arising in the evolution of commerce. It was an arrangement which everywhere preceded the era of modern mercantile enterprise, one in which, instead of mercantile agents scouring the world for its products, the producers brought their own wares to a stated place at stated periods, and directly or indirectly exchanged with one another.

This former trading system has not yet died out, even in enlightened communities, and still exists in its full vigor in some less enlightened states. At Nijni Novgorod, in Russia, for instance, a great fair is held every autumn, which continues for two months, and attracts annually more than 300,000 people. These traders are of the most extraordinary variety, comprising Chinese, Tatars, Cossacks, Persians, Bokharans, Kirghiz, Jews, Circassians, Turks, Lapps, Siberians, Europeans and, in short, representatives of every race of the Eastern continent. These natives of diverse regions bring their multiform wares, and an immense amount of traffic takes place in the redistribution of these varied goods.

Another great recent fair is that annually held at Hurdwar in India, about 120 miles northeast of Delhi. Here also some 300,000 persons annually congregate; but on every twelfth year, which is deemed especially holy, an extraordinary religious festival is held, and more than 2,000,000 persons attend this great market of the Eastern world.

This crude system of traffic, however, has vanished in most enlightened states, as utterly unsuited to the magnitude of modern operations, and the sale of goods by sample, through the aid of traveling agents, or in many cases by circular and letter, has succeeded it. The fair which was so general a feature of the past has its present chief representative in the market for the sale of food.

To return to the question of the manufacturing city, it must be premised that the problem of production has assumed in this age a very different aspect from that which it held in the past. There was no marked reason in ancient times why manufacture should be conducted at one place rather than another, except the development of special skill in some handicraft. All work was hand work, and little accumulation of capital was needed in its prosecution. Traders dealt principally in manufactured material, with little thought of any particular advantage in localizing industry; and though many commercial cities became active manufacturing centres as well, it was rather through chance than any definite purpose. In the mediæval period, indeed, cities specially devoted to manufacture arose, their advantage being in the skill in certain industries which their inhabitants had attained. But within the last century the question of advantage in manufacturing enterprise has grown far more complex, and the whole problem of industry has taken a new form.

The hand work of semi-civilized lands, with its imperfect implements, would seek in vain to compete with the power production of more advanced realms, where the vigor of the steam-engine, and the employment of skilfully adapted machines, that seem to think as they work, have enabled goods to be produced in quantity, variety, and cheapness undreamed of in past times. It is no longer of minor importance whether material be imported in its raw or its manufactured condition. Industry strongly tends to establish itself where skill, capital, and machinery exist most abundantly; and from this has arisen one of the most pressing questions of modern times.

To her quick recognition of this fact is due the abnormal rapidity of England's industrial growth. The demand for manufactured goods for home consumption was rapidly replaced there by a demand for raw material for home manufacture, to be afterwards distributed throughout the world. In fact the former great advantage in the possession of the carrying trade of the world had become secondary to the enormous advantage to be derived from the possession of the world's manufacturing industries. England succeeded in gaining for herself the lion's share of both these sources of wealth, and while her ships swept every shore in search of raw material, her iron and coal mines, her abundant capital, and her accumulation of skilled labor, furnished the requisite conditions for converting this material into finished goods for the world's consumption. Great cities of the loom and the hammer arose in every quarter of the island, the whir and roar of industry resounded far and wide, and millions of tons of deftly wrought and woven goods were distributed by outgoing ships to every region of the earth. That this small island of the sea has grown enormously rich is not surprising. It has taken the world in its grasp, and shaken the golden dust of all lands into its ever ready lap. The soil of the whole earth is engaged in producing materials for the factories of the British isle. Indeed, Nature's unassisted efforts have proved insufficient to satisfy this craving appetite for more food, and the cotton of India, transplanted to America, is now produced for the English looms in quantities that would have utterly amazed the easy-going world of the past.

There are, however, decided symptoms of a change in this state of affairs. Other countries fully perceive the advantage which England has derived from her ships and her looms, and are coming with increasing energy into the contest for a share of the rich profits of commerce and manufacture. In doing so they are adopting the methods by which England's supremacy was gained, that of the exclusion of foreign competition during the infancy of their new industries, by high tariff charges on imported goods.

This system was adopted early in the history of the United States, and there is no question that greatly to it has been due the marvelously rapid development of manufacturing interests in this country. The growth of American industries was sternly prohibited by England in the colonial period, and continued at a low level until considerably within the present century, the new-formed states being quite unable to compete on even terms with the highly developed English industries. The one country was possessed of enormous capital, which took the form of opened mines, great factories, abundant machinery, and a large population of skilled artisans. The other country was destitute of all these advantages, and had nothing but its raw material, its strong hands, and its active brains. The advantage was decidedly on the side of England. American manufacture could make no rapid development without special aid, and this, at length, was given it by protective duties. It is hardly necessary to describe the result. The mines of the United States were opened and their coal and iron extracted. Factories were everywhere built. Abundant machinery was made. Capital accumulated. Skilled labor was drawn across the seas. The shrewd American surpassed his old-world brothers in their own arts. A century of American liberty has passed by, and the disadvantages described at the beginning of this paragraph have vanished. American industry has lifted itself to a full level with that of England.

The question which is now most prominent in American politics is the following: "Is it advisable to cling to the plank which has carried us across the waters after the solid shore is reached? Shall we retain our tariff system now that our manufacturing industries, which it usefully fostered in their youth, are full grown? Or shall we rather adopt the British theory of free trade, and enter upon an era of open competition with the world?"

That, all things being equal, free trade is the true theory of industry, no one disputes; and where natural conditions are unequal it is bad policy to attempt to equalize them by artificial obstruction, since such tactics must act to the eventual disadvantage of the country adopting them. But where the inequality is an artificial one, due to one country's having come first into the field, the state of affairs is very different, and every nation is justified in protecting itself against a discrimination not based on natural laws. Such an artificial inequality existed between England and America at the beginning of this century. It has been overcome by the aid of tariff protection, the industry and ability of the American people, and the rapid accumulation of capital in this country. As matters now stand, we are the equal of England and Europe in skill, capital, and economy of production, and their superior in many industries; and were this alone to be considered, we might safely dispense with protective duties, and enter upon free competition with the world.

But there is more to be considered. An artificial inequality of another kind still exists, of a vital character, and one which it would be dangerous to deal with by hasty or ill-considered legislation. This is the inequality in wages and life conditions between American and European workmen. The American mechanic has a higher standard of existence than the European. He is better fed, lives more comfortably, and is able to surround himself with more luxuries, and to enjoy more or a higher range of pleasures than his European counterpart. This inequality can be removed only in two ways: one by reducing the American workman to the standard of the European; the other by lifting the European to the American standard. Which of these should be adopted is a question that scarcely needs consideration. The example of the comfort possessed by the American workman has not been without its influence upon the European, and has helped to induce a strong demand for higher wages and a superior grade of life comfort by the artisans of Europe. It is certainly desirable that the extremes should meet in this way rather than by a descent of the workman of America to the present European level of comfort and enjoyment, and if the protective policy of the United States is acting to produce this effect, we have a good argument for its retention. Should this result be attained, the American protective tariff might safely be abolished, since the final inequality between the conditions of American and European industry would be removed. The other method—that of reducing the American workman to the European standard of comfort—seems inadmissible. We might through it gain an increased hold on the world's traffic, but our workman would have less meat in his pot, and the contents of the workman's pot are no longer to be ignored by political economists. It is, moreover, questionable whether the decreased home demand, owing to diminished wages of workmen, would not quite equal the increased foreign traffic. If so, the result would be a simple transfer of much of our business from its present holders to the shipping interests, with no augmentation of the business of the country as a whole, and a serious injury to the nation through the impoverishment of its workingmen. Such a contingency, however, is scarcely worth debating, for it may be taken for granted that the army of American labor will never submit to the operation of laws tending to their industrial degradation. It may be safely said that the chief occasion for protective tariff now existing in the United States lies in the high wages of workingmen, and that one inevitable result of tariff reduction would be a diminution of the standard of comfort of American artisans.

Artificial inequalities of production will inevitably, in time, adjust themselves in accordance with the highest interests of mankind; and the same may be said of natural inequalities, next to be considered. It is an evident fact that the commercial supremacy of England is artificial and opposed to natural laws. She produces but little of the raw material of her manufactures, while many other countries are her equals in iron, coal, and the other essentials of modern industry. She carries raw materials from countries to which she returns the finished products, thus adding to the cost of the latter a double ocean freight charge. This condition cannot become permanent. The United States and other countries are actively coming into competition with England for the manufacture of their own native materials, and as in doing so they save a certain expense in transportation, their effort must grow more and more successful. It is highly probable that in the time to come all the useful productions of nature will be wrought into articles of consumption at that nearest point to their place of origin where all the other requisites of economical manufacture exist. In these days of sharp competition the question of freight is an important one, and cannot but have a controlling influence upon the final result. We can perceive marked indications of the working of this principle within single countries, as in the present tendency to remove the cotton manufacture of the United States to the vicinity of the cotton fields. That such a relation of industry will in the end generally prevail can scarcely be questioned. The advantage arising from reduced freight is one that no logic, skill, or capital can permanently overcome.

The effect of this principle must be to readjust the commercial and manufacturing relations of nations. The supremacy of England is in great part artificial, and is steadily being lessened by the increased manufacture of their native products by competing states. As regards the European nations, they are to-day nearly on a level in regard to industrial conditions, and each is more and more inclined to keep to itself the fabrication of its native raw materials. Before many years the commercial contest may be narrowed to the products of lands whose industries are yet in the primitive stage. Eventually modern machinery will make its way, in company with modern skill, to all lands where the conditions for its profitable employment exist, and industry will gain its final stage, in which each country thus favored by nature will work up its own raw materials at home, and perhaps transport the finished product in its own ships abroad.

With this question is closely bound up another of equal importance, that of food production and conveyance. The United States is to-day the greatest food-producing country of the world. Its yield is much beyond its consumption, and thus it sends abroad not only raw material to British workshops, but food to support British workmen while converting this material into useful fabrics, of which some at least return to our own land. This is an unnatural condition and cannot continue. It is cheaper for consumers to seek food than for food to seek consumers, and in these days, when the question of comparative economy is superseding all other economical questions, this fact is of the utmost importance. Food consumers are crowding in myriads to this country, whose population must in time become sufficiently great to use all its food at home, none being left for transportation abroad. Before that day arrives the general condition of the world's industry will probably have become that above indicated, each country working up its own useful products, so far as natural facilities for manufacture permit, while the commerce of the future will be in those substances which are not of world-wide production, or between those countries in which there are natural inequalities in respect to economical manufacture. Population will undoubtedly adjust itself in accordance with these requirements, and mankind be distributed in strict accordance with the proportionate relations of food supply and of facilities for manufacture in different countries. In short, all artificial inequalities in commerce and manufacture must in time disappear, and natural inequalities alone control the industrial distribution of mankind.

CHAPTER XVII.

THE WEALTH OF NATIONS.

WITH the subjects treated in the preceding chapter is closely bound up another, that of the accumulation of wealth. This word wealth is one of extensive affinities, and might properly be made to include much to which it is not usually applied. Its restricted form, capital, means only that portion of man's possessions which is employed in the production of new possessions. But, in its complete sense, wealth may be taken to include all that supplies human necessities, comforts, and luxuries, or in any way is of use to man as a physical product of the earth. There is a vast accumulation of mental wealth as well, the result of long centuries of human effort. A modern language, for instance, is such a valuable possession, wrought into shape by ages of mental labor. Yet these treasures of the intellect are not usually classed with the world's wealth, whose scope is ordinarily limited to physical possessions, including the direct product of nature and the results of human strength and intelligence as applied in manufacturing processes.

If we may judge from archæological indications, the possessions of mankind were for ages limited to articles of wrought stone and bone, which had a value as domestic implements, or as hunting and warlike weapons. At a comparatively recent date these stores of wealth were greatly increased. Hand-built habitations of some sort replaced man's early homes in caves and trees. Skins and woven goods became common articles of apparel. Metallic implements replaced those of stone. Furniture and utensils greatly increased in quantity and variety. Property in two of its still most valuable forms came into existence. Lands were cultivated, and the soil became a valued possession. Cattle were tamed and herded, and domestic animals became a form of wealth. Originally the world's wealth was the common property of the world, from which each person was free to supply his necessities. Yet from a very remote date the working capital of mankind, the tools or weapons by whose aid these necessities were supplied, was held as individual property, for whose retention the owner would risk safety or life. At a later date each tribe seized a fixed portion of the earth, and held it, with its products, as the common property of the members of the tribe, to the exclusion of the members of all other tribes. By this period the sum of individual property had greatly increased and included a considerable variety of articles of use and ornament. Eventually individual rights were gained in the tribal property, and in process of time nearly all communal claims disappeared in advanced nations, and the wealth of the world became, in great part, divided up among individual owners, each of whom held his share as an exclusive possession.

Such is the present status of the world's wealth. The division among individuals, it is true, is not complete, and never can be. Much of the wealth of nations is held and applied by governments for the common good. We may instance highroads, public buildings, national ships, and fortifications. All these are communal property, kept for the good of the people as a whole. In regard to the future status of wealth it may be said that there exist two strong forces, one tending to a return to the ancient general communism, the other to a retention and increase of individualism. The former is displayed in the socialistic agitation of the lower classes of Europe, and in the movement of a higher class towards state control of railroads, telegraphs, and other elements of human wealth. The latter is shown in the rapidly increasing accumulations of wealth in private hands, which is one of the most marked features of the modern industrial situation.

If we now consider the riches of mankind more in detail, it becomes evident that they exist in two forms, not sharply separated, it is true, but between which a dividing line may be drawn. One is the perishable, the other the enduring form of wealth. All wealth is indeed perishable in course of time, and some even of its more durable varieties decrease in value with considerable rapidity. Yet there is a large section of the world's possessions which perishes annually, and another whose value after a few years becomes greatly diminished. The vegetable food supply, for instance, needs to be annually renewed. The animal food supply is also of transitory value. These compose stores of wealth which must be rapidly consumed. Their value is temporary only. If not quickly employed they become useless, and cease to be a part of the world's wealth. The other form of wealth is one which long retains its value. A well-built stone bridge or a skilfully constructed aqueduct will remain available for ages, and some of those built in Roman times are still in daily use. Others of the architectural structures of the ancient world would be still in condition for use if they had not been purposely wrecked by human hands. These two extreme forms of human wealth are connected by many intermediate stages, varying in degree of endurance, from human clothing, which is ordinarily of annual consumption, but sometimes more durable, to furniture, tools, dwellings, railroads, telegraphs, etc., all of which are of considerable durability, but need frequent repair to give them their seeming permanence.

The value of human possessions also fluctuates or disappears from other causes. The annual change in fashions greatly reduces the worth of large supplies of manufactured material. The invention of a superior tool makes its predecessors of little or no utility. The variation in human habits and tastes frequently affects the price of goods. The introduction into a country of new wares may render preceding wares valueless, while the migrations of commerce or government occasionally cause cities to be deserted, and great accumulations of habitations to lose their worth. The variations in degree of civilization also have an important effect upon the value of human possessions. In short, there is nothing of permanently fixed value, and that which to-day is as fit for use as it was a century ago may have been rendered utterly valueless by movements of population, by changes in taste and fashion, or by superior methods of supplying human needs.

One great agent in the disappearance of wealth, during all ages, has been the destructiveness of war. This is not because war has destruction for one of its ordinary intentions. Its most common object has been to seize and enjoy the product of the labor of others. But wealth obtained by violence is seldom highly valued, and is consumed with a reckless disregard of the labor it represents. In gaining it by force there is also much unavoidable destruction, while such material as a victorious army cannot use is ordinarily ruined or destroyed. The armies of to-day, indeed, are not so destructive as of old, when utter ruin was frequently left in their wake; yet their best record is one of waste and havoc, and of a terrible sacrifice of wealth in the form of human life.

Among the most disastrous effects of ancient wars was the replacement of industrious populations, whose labor had rendered large regions fertile, by dull and idle populations, who suffered nature to recapture the prizes of industry. A marked instance of this is seen in the history of Mesopotamia, which in the past was made highly productive by intelligent agriculture, and gave abundant food to a very large population. To-day it feebly feeds a straggling and debased few. Many similar instances might be adduced, such as Egypt and Peru, in both of which a vigorous productive power has decreased or disappeared through changes caused by war.

The diminution of the world's wealth thus caused is, in its true nature, unlike that arising from the mere destruction of the necessaries of life. It must be measured in a different scale. The destruction of such material by war, in the past ages of the world, was not, indeed, of any abiding importance. For much the greater portion of the annual product of labor consists in supplies of food and clothing, whose loss can be readily replaced. An army has hardly marched out of a country before the inhabitants are at work reproducing the vanished supplies. And even if the population has been considerably reduced by massacre or subsequent famine, the increased food per person yielded by the land induces a rapid recovery in numbers. The habitations, tools, furniture and other possessions of the working population also need constant repair and replacement even in times of peace, and may be quickly reproduced after a war. In fact, so far as these more necessary forms of wealth are concerned, a country that has been very destructively visited by invasion may twenty years afterward have completely regained its old status. Many instances of this kind might be adduced if necessary.

It is to the possessions of the richer inhabitants, or of the national government, that the effects of war are most disastrous. Palaces disappear, castles are destroyed, temples are ruined, the accumulated capital by whose aid great works were produced vanishes. It is true that capital may again accumulate, and after many years the country regain its old condition in this class of works; but progress has been permanently retarded, and valuable periods are wasted in simply reclimbing to the old level.

War, however, is but one of the agents that check the accumulation of wealth. Other agencies have been enumerated above. As a consequence of these various influences the world's wealth has needed to be in great part renewed annually, and almost entirely every century. Of all the vast labors of the ancients there remain to us as results only a few structures that are still of use to mankind, and a limited number of ruins which have some value as curiosities. Indeed, some of the greatest works produced by mankind seem to have never had any other value. We may instance the Egyptian pyramids. The Great Wall of China also very quickly lost its utility, and became a mere curiosity.

The ancient period of the world ended in an outbreak of warlike destruction which, for virulence and universality, has had no equal in human history, and from whose effects many once smiling regions of the earth have never recovered. But this permanent disappearance of wealth arose less from its destruction, than from the massacre of its producers. Civilization in the regions referred to vanished before the sword, and was replaced by barbarism. The world has grown poorer, not in consequence of the destruction of wealth, but of the wealth-makers.

But if now we come to consider the most advanced regions of the earth, even in times of peace, a similar disappearance of wealth is indicated. The nineteenth century has been its own architect. Of the work of the preceding eighteen centuries of the Christian era comparatively little to-day exists. The dwellings have been nearly all replaced. The furniture, tools, and ornaments have given place to new. This, indeed, is not wholly the case. Considerable wealth in articles of use and ornament, in pictures, statues, books, etc., the product of past centuries, remains in existence, and has gained rather than lost value with age. But these are the property of the few, and their value is often more in fashion than in fact. The great mass of existing wealth is of this century's production, while its most costly works, its railroads, canals, tunnels, bridges, steamships, workshops, with their machinery, and other equally valuable material, are wholly the gift of the nineteenth century.

The world has become during this century, however, through the great productiveness of its new appliances, far richer than in any preceding period, and any general destruction of this wealth would reduce it to a comparatively much lower level of penury than ever before. Of course its enormous productive power would enable it rapidly to recover from its losses, but only through a consumption of irreplacable wealth, those stores of combustible coal to which the nineteenth century owes its material advancement. Destruction to-day, therefore, would be far more disastrous than of old, when all loss was repaired by the labor of human muscles, and there is much reason for satisfaction that the age of power production is coincident with an age in which war has lost much of its reckless violence.

How long man has existed upon the earth it is impossible to determine. It has undoubtedly been for many thousands of years. During all that period he has been actively at work. The quantity of valuable material produced has been incalculably large. Yet it is nearly all gone, and our present century has had to build its world for itself. Are we to deduce from this that human labor is destitute of permanent results, and that every generation works almost wholly for itself, without care for or effect upon the generations of the future? Such would seem to be in great measure the case so far as material heritage is concerned. Of the products of mankind in all the past we possess but a few shreds, the tattered fragments of vanished ages of labor.

And yet the truth is that no period works for itself, and the effect of the labor of every century is felt in all succeeding centuries. The world's wealth of today is in no absolute sense of this century's production, but is, in very great measure, an inheritance from the past. We have inherited, not material possessions, but constructive ideas. These are of infinitely more value, since they are imperishable. The man, for instance, who first conceived the idea of furnishing his boat with a sail, not only benefited himself physically, but all mankind mentally. His idea survived him, and still lives. If this idea had not been conceived the world would remain destitute not only of it but also of the millions of other ideas which have flowed from it. We should still be navigating with oars. So the man who builds a house to-day is very far from doing all the work himself. Myriads of architects of the past hammer and toil at it unseen. Their labor acts upon his mind, and through his mind upon his mansion. Ideas are built in with brick and mortar, and perhaps not one of those ideas was conceived by the present builder. He knows how to put in his doors and windows, how to construct his rooms, how to provide for ventilation, heat, and a thousand other requisites. If he knew none of these his finished house might resemble a bark wigwam, or a hut of branches. But none of this knowledge is his own making. One man of the far past devised the appendage of a door, another of windows, a third of hinges. Some learned to make and use certain tools. Others discovered the value of iron and other metals. This one gained the idea of chimneys, that one of fire-making apparatus. One learned to make bricks, another to compose and shape glass, a third the art of erecting or roofing. Thousands of such separate devices might be enumerated, each successively gained by dint of hard thought, and each employed in the modern mansion, though the builder may be quite oblivious to the fact that he is not himself the architect of his work. His house is built, but all the past has had a hand in its erection.

The wealth of the nineteenth century is not, then, the product of its own labor in any but a minor sense. It is due to ideas which were mostly the product of the past, and though that past has added but little physically to our existing wealth, its mental addition is enormous. Of our constructive ideas but a minute fraction is due to ourselves. The remainder we have inherited from our forefathers, who slowly wrought them out through ages of unknown duration.

Destruction of material wealth, then, is comparatively unimportant so long as ideal wealth survives. Destruction of ideal wealth is loss almost beyond recovery. Ages may pass ere it is reproduced. War has been truly destructive only where it has destroyed ideas. Such was the case in the instance cited, that of the Mesopotamian region. The industrial conceptions which once were active there have vanished, through warlike influences, and the wealth of the land has vanished with them. The present inhabitants have forgotten the arts of their predecessors, and in that loss of ideas they have lost their all. Babylonia cannot be rebuilt by its present inhabitants except in the painfully slow method of new discovery, in which it of old gained its flourishing prosperity.

On the other hand war adds to the world's wealth by its aid in the outflow of knowledge. Fortunately its plunder consists of ideas as well as of gold and silver, and these ideas are sown, like fertile seeds, in new soil. During the past war was, in this way, vigorously useful. By carrying the wealth-yielding devices of one region to others it aided enormously in the outgrowth of human civilization. To-day, happily, commerce and emigration have replaced it in this duty, and the expansion of useful knowledge is no longer dependent upon the sword.

The raw material which is provided by nature has in itself but a partial value to man. A portion of its value, usually the major part, comes from human labor. And this labor becomes valuable in close accordance with its quantity. The iron which we use in our tools is valueless to us while existing as ore in the mines. Labor must be consumed in extracting it from the rocks and reducing it from its ores, in refining it, and in shaping it into the requisite tool. In doing this other material, also the product of labor, is used. The value of the finished implement is largely governed by the quantity of labor thus consumed, with the additional labor necessary to convey it from its place of origin to its place of use. Every hand engaged in this labor is connected with a mouth that must be fed and a body that must be clothed, and the value of the food, clothing, and other necessaries and luxuries consumed during these processes forms a main element in the value of the product.

But there is another element in value of yet greater importance—the relation of supply to demand. If the supply exceeds the demand the price declines. If the demand exceeds the supply the price rises. The industrial effect of the latter is to cause strenuous efforts to increase the supply. That of the former is to decrease the supply through the cessation of labor. In either case there is a constant tendency to bring the supply into harmony with the demand at the lowest satisfactory level of profit, and thus to bring the value of the article into a close accordance with the value of the labor consumed in its production.

The equalization of demand and supply, however, cannot always be readily effected. In many cases the quantity of raw material is limited. In other cases the quantity of skilled labor available, or of suitable machinery, is limited. This limitation may apply to a part or the whole of the productive processes. The consequence of any such diminution of supply below the demand is an increased market price of the substance. But this by no means increases the profits of all the labor engaged in its production. The wages of the general labor is but little affected, and the increased profit falls just where the limitation takes place. If there be a scarcity, natural or artificial, of the requisite machinery, the proprietor of the available machinery obtains the increased reward. If the limitation be in the quantity of raw material produced, the owners of that material gain the enhanced profit. If it be in the quantity of skilled labor, the skilled workman obtains higher wages. Wherever the check to supply operates, at that point the pressure of the demand is effective, and there the abnormal profit accumulates.

Suppose, for instance, there be a natural limit to the supply of some raw material, say the metal tin, or platinum, bringing the possible market stock below the limit of human needs. In this case the price will be unduly increased, the excess profit falling to the owners of the mines, who will grow rich through their control of the limited supply. In the case of a patented invention, the sale of which is restricted by law to the inventor, there is an artificial limit to the supply which must produce a similar effect. The enhanced profits collect at the point of limitation, and in this case fall to the inventor. A third case is that of an article in whose manufacture great skill is required, which skill is confined to a limited number of specially trained persons. In this case the reduction of the supply rests with the workmen, to whom the enhanced profit comes in the form of high wages. There is, however, a natural limit to abnormal profits, in the decreased demand that follows every increase of price. If the price of any article be made too high, the demand ceases, and with it all profit. A decrease in price increases the demand and thus adds to the sum of profits, up to a fixed point, beyond which an increased fall in price does not correspondingly increase the demand. This point, which is not always readily discovered, is that of greatest profit.

There is thus a natural law controlling values, which may be briefly stated. In every case where the available supply is practically unlimited as compared with the demand, and there is no artificial check to production, the price inevitably falls to a level governed by the necessities and demands of the workmen engaged and the profit which competition leaves to the employer. Any increase of supply, which would bring the price below this level, has its natural check in a drifting of labor to less crowded pursuits. Any diminution of supply tends to bring in fresh labor. Fluctuations of this kind are constantly arising and constantly disappearing before the iron law of necessity. They are like the ripples on the surface of water, which are incessantly produced by the movements of the air and as incessantly overcome by the force of gravity. On the other hand, where the supply is limited, naturally or artificially, this limitation becomes a factor in the price, and the increased profit thence resulting falls into the hands of those who control the supply, whether capitalists or workmen.

Metallic money is ordinarily looked upon as differing in its nature from other useful products, and to be classed in a special category. Yet a critical examination fails to discover any distinction. It is a product of the earth, whose whole value flows from the relation of the quantity supplied to the demand. In this respect it exactly agrees with every other article, whether used in its first form or in a subsequent manufactured form. The exchange of a certain number of sheep for a cow, and of a piece of gold for a cow, are processes of precisely the same nature, and the primitive exchange in kind is still in actual, though masked existence. The idea that the value of money is fixed, while that of other articles fluctuates, is equally illusory. Every change in the price of an article is a variation in the exchange value of money as compared with that particular article, and is controlled by their comparative abundance and demand for consumption. The value of gold and silver, like that of potatoes, fluctuates with every increase or decrease of the quantity in circulation; their purchasing value in special cases is controlled by the relations of their supply to that of the articles for which they are exchanged.

Every effort to fix the purchasing value of money, of which many have been made in the days antedating the science of political economy, must necessarily fail. Its value is controlled by a natural law, which refuses to be set aside by any political enactment. If an effort be made to cheapen it below its natural value, it will disappear from circulation. If an effort be made to cheapen the other products below their natural value, they will cease to be produced. Only in cases where profits or wages admit of a reduction can laws regulating prices be effective. Laws which destroy all profit must check all production.

In modern times a new element in exchange has come very greatly into use, in consequence of the volume and intricacy of business performed. This element is that of credit. Of course it has existed to a considerable extent in all civilized periods, but in recent times its volume has become greatly augmented, and has rendered necessary several new appliances of exchange. Among the most important of these appliances is the bank, of which a short account is here desirable. It is, in its simplest form, an institution where money may be deposited for safe keeping. The money is lent to the bank, to be used for its own purposes, on the promise of return upon demand. In Greece and Rome banks of deposit were numerous. They resembled the banks of to-day in their operations, though they do not seem to have issued notes. Many of these banks gained the confidence of the people by the integrity of their operations. In modern Europe the goldsmiths and dealers in precious metals seem to have received money on deposit long before banking became isolated as a separate business. The earliest mediæval banks were established in Italy, the Bank of Venice being the first of these in date, though it was not till a late period that it assumed the function of a modern bank. Banking, in its true form, was first practiced in Florence, in the thirteenth, or possibly in the twelfth century. Of one of its undesirable results we first hear in 1345, when two important banks of deposit failed, and drew down many smaller institutions with them. The disorder and ruin produced resembled that of a modern mercantile panic. Among the banking institutions of Europe of a later date one of the most important was the Bank of Amsterdam, which was founded in 1609 as a bank of deposit only. It engaged not to lend any of the money entrusted to its keeping. But during the later years of the eighteenth century this promise was broken, and the bank failed in 1794, in debt to its depositors more than ten millions of florins. Banking in England began in the seventeenth century, being first conducted by goldsmiths, who probably borrowed the art from Holland. The Bank of England, the greatest of all banking institutions, was founded in 1694. The Bank of France, second only to it in importance, did not come into existence until 1800. The amount of business conducted by these two establishments enormously exceeds that of any similar institutions. The Bank of France is the only authorized issuer of bank notes in France, the limit of its issue being now fixed at 3,200,000,000 francs. The notes issued by the Bank of England amount to over £40,000,000.

Banking in the United States was long almost completely free to any persons who desired to engage in the business, while the issue of paper money was permitted with slight restrictions, and on doubtful security. This looseness produced its natural result in an extraordinary confusion and variation in the quantity and value of these "promises to pay," and an amount of bankruptcy and ruin unknown elsewhere. Between 1811 and 1820 about one hundred and ninety-five banks became bankrupt. From 1830 to 1838 the bank-note circulation increased abnormally, and in the latter year there came a panic that swept more than half this circulation out of existence, and with it nearly one hundred and eighty banks. In 1857 came another panic and all the banks of the United States again stopped payment. These troubles were, of course, not due wholly to the banks, but were in considerable part a consequence of a vicious banking system. This has been more recently replaced by a national banking system, in which the circulation is secure, and the banks have become as stable as in any European country.

The business of banking differs in no essential sense from ordinary mercantile business. Credit in the exchange of money or goods is now, and probably always has been, a common custom. A degree of trust in the honesty of the borrower or buyer is essential to these transactions, and some profit for the use of goods or money is always exacted. The extra profit which a merchant places on goods sold on time is precisely similar in character to the interest profit exacted for loaned money. Houses and lands are lent on the same principle that money is lent, and a profit is exacted for their use, as in the case of money loans. The issue of bank notes is a transaction of the same general character. The banks pay their creditors in promises instead of cash. The effect is precisely as if every holder of a note had lent that amount of money to the bank without interest. There is a profit made on the money, but in this case no part of it is paid to the loaner; it is all retained by the borrower. Thus in all credit transactions a single principle is involved. In every case a loan is made, usually with the hope of profit to the lender. Eventually the goods are returned, with or without added profit, or are paid for, on the same conditions. Yet men were long in perceiving that interest on money is similar in character to profit on other credit transactions, and strong efforts have been made to prevent the dealing in money at a profit, though restrictions have rarely been placed on similar dealings in other goods. The practice of lending money on interest is at least as old as the time of Moses, and laws against usury, as it was called, were enacted by the Jews, who were permitted to take interest from strangers, but not from their own countrymen. This law, however, seems to have been evaded, since the Scriptures frequently condemn the practice of usury.

No such restrictive laws existed in Greece and Rome, but the rate of interest there was very high, in consequence of the ease with which debtors could evade payment. The natural law in all credit transactions came into operation, that the profit charged must bear a close relation to the risk. In Greece the rate of interest generally ranged from 10 to 18 per cent. and upwards. In Rome, under the republic, it was sometimes as high as 30 or 40 per cent. Both the Christian and the Mohammedan church forbade the taking of interest, with the inevitable result of causing it to be practiced in secret, at an exorbitant rate. The early Christian church, indeed, perhaps influenced by the Mosaic prohibition, bitterly opposed usury, as it called all charge for money. Not only was the civil law framed in accordance with the ecclesiastical, but the dread threat of eternal perdition hung over the money-dealing delinquent, even if he should escape the infliction of temporal punishment.

This persistent thrusting of money-dealing beyond the pale of morality was necessarily unsuccessful. But it had the pernicious effect of increasing the rate of interest, of throwing the great bulk of the business into the hands of the Jews, on whose minds the anathemas of the church had no influence, and of increasing the hatred felt against this unfortunate people, who were abhorred for the crime of growing rich at the expense of needy Christians. The first of the Christians to take interest, in opposition to the thunders of the church, were the inhabitants of the active commercial cities of Italy. In fact some of the governments of these cities began the practice, by the payment of interest to their own citizens. Such was the case in Genoa, where the government, during its wars, borrowed money from the wealthy citizens, and pledged the revenue from customs duties in payment of the interest. The combination of these state creditors into an association gave rise to the celebrated Bank of St. George, of Genoa, which played a remarkable part in the history of that city.

Italian capitalists, under the name of Lombards, were soon found in every European city, competing with the Jews as bankers and money-lenders. From them the banking district of London gained its familiar name of Lombard street. The Italian money-lenders soon combined into a guild, whose ramifications extended all over Europe. In consequence they were enabled to bring into active exercise a system of foreign exchange, which, it is true, did not originate with them, but of which they greatly increased the utility.

Their operations commenced in the issue of *assignments,* similar to the modern letter of credit, they receiving money in one place and paying it through an order on their correspondents in another, the merchant and traveler being thus saved the risk of transporting specie. This branch of business was in extensive use in the thirteenth century. It proved very profitable, as five or six per cent. was charged on transactions of limited duration. In consequence much capital was attracted into the business.

From the assignment grew the *bill of exchange,* one of the most important of modern financial expedients. The use of bills of exchange, indeed, is such a natural requirement in any extended business, that they were employed to some extent in the ancient world. But they only came into general use at the period named. Perhaps the oldest example extant is one dated at Bruges, 1304, and payable at Barcelona. The letter or bill of exchange is simple in its principle, though in modern times it has led to a very complex business. It may be here briefly described. Some of the merchants who deal with foreign countries both sell and buy goods abroad. They thus have both debtors and creditors in foreign lands. By directing their debtors to pay their creditors all transport of specie may be prevented, except that covering the profit or loss on their transactions. In case they have no debtors abroad, some other merchants may have. Thus one merchant may sell his claim on a foreign debtor to another who has a creditor abroad. This sold claim, under the form of a bill of exchange, is transmitted to the foreign creditor, who collects his money from the foreign debtor. If the claims are equal no money need pass from country to country. This simple principle has gained an extraordinary extension in modern times, and wonderfully facilitates the transaction of business. In its operation between two countries, as the United States and England, the whole volume of debts which the merchants of the first owe to those of the second is offset by the whole volume of credits, and no money need cross the ocean except that required to pay the difference between these two sums. Or if the United States owes a balance of debt to England, and France a balance to the United States, France may be directed to pay England, and thus the necessity of transporting specie across the Atlantic be obviated. In every modern case where a flow of gold is found to set in from one country to another, it is evidence that the receiving country has a balance of trade in its favor, which can be settled by no shifting of exchange with other countries. The same principle is now applied in the settlement of local banking transactions, under the name of the Clearing House.

These profitable systems of exchange, set in operation by the Italian bankers and merchants, were not long left in their exclusive possession. The only effect of the church opposition and the laws against usury was to cause the imposition of high rates of interest to cover the risk incurred, and one instance is on record in which the extraordinary interest of 216 per cent. was exacted. But a healthier condition of affairs arose when the church barrier yielded to the pressure of business, when kings and governments became frequent borrowers, and when banks came into general use—institutions without souls, and thus without dread of perdition for their sins. With the establishment of these institutions the laws controlling debt grew more precise, honesty was gradually found to be the best policy, and the interest on money steadily declined as the honor of the business community rose. Instead of the ten, twenty or forty per cent. of old, money at three per cent. can now be readily obtained by governments whose honor and ability to pay are above suspicion, while private borrowers of known integrity can obtain money at very low rates. As in all business transactions, however, the profit in exchange is, and always will be, made accordant with the supposed or known risk.

The great complexity of modern business transactions, the successive waves of prosperity and of panic, the rise and fall of prices, and undoubtedly the rapid advance in methods of production and in works of public utility, are largely due to the individual ownership of the wealth of communities which now prevails. Of course it is not easy to decide just what consequences would arise from a general establishment of communism; but we cannot well avoid the belief that it would lead to a checking of progress, and a replacement of the existing activity by a widespread stagnation. The only instance the world has known of national communism. that of Peru, favors this conclusion. Happiness existed there, it is true, but the wheels of progress ceased to revolve.

Yet the active scramble for a lion's share of the spoil which individualism inaugurates, while replete with good effects, has its evil side as well, and has been the source of as much disaster and unhappiness as the world has felt from any other agency. Some of these evil effects it is desirable to note. In a full consideration of the subject of wealth it quickly appears that it exists in two unlike states. Much the greater portion of human productions is immediately consumed, or is employed solely for private gratification. A small, but highly important portion, constituting the excess over that needed for individual use, is applied productively, in an effort to increase the possessions or the income of its owner. In this form wealth is called capital, and both the material progress and the business disasters of mankind arise from the method in which this capital is used.

We have partly considered the use of capital as money which is loaned at interest. But capital takes numerous other forms. It includes all stocks of goods which are kept for sale, all houses and lands which are kept for rent, or which are employed in the business of their owner, all workshops, mines, railroads, canals, ships, and every material or mental production whose use is loaned to the public at a profit to the owners. The tools of the workingman, his skill in his trade, and the vigor of his muscles, form his capital, as the mental ability of the artist and the author forms theirs. The word embraces whatever is employed for the purpose of yielding an income to the owner, and thus adding to the sum of comforts and enjoyments of himself and others.

In modern times the capital of the world has enormously increased, and the constant effort to use it productively has frequently resulted in disaster, while the sharp competition thus originated has led to a severe scaling down of profits in all directions. This competition in the mercantile and manufacturing world, indeed, has had the effect of reducing profits and wages to the lowest living figure in almost every direction, and of supplying the public demand for commodities at a lower price than perhaps could be established under any other system. It, in fact, often goes further than this, and by over-production or over-trading cuts off all profits, and frequently a large portion of the capital employed. Such an excess of supply over demand, aided as it is by an unwise and hazardous extension of credits by banks and private individuals, forms the main cause of the panics which occasionally descend like a pestilence upon thriving communities, and sweep their illusory prosperity to the winds. The cause of these mercantile panics is in all cases the same—over-production, and the locking up of capital in unprofitable enterprises which have attained an inflated value through ill-founded public confidence. They can be cured only in one way. The excess stock must be consumed, and this in the face of an abnormally depressed demand, which greatly lengthens the time necessary. The false value of railroad property or other productions in excess of demand, must vanish, and be replaced by a value in accordance with the public distrust. This stage once reached, public confidence is gradually restored, business begins to grow again, and prices to advance towards their normal level. But years often pass in this slow recovery, and these are years of misery, semi-starvation and ruin to great numbers of the population, whose business has flown, or whose wages have vanished. Such is the rise and fall of human prosperity under the modern system of individualism and hazardous credit, and such it must continue unless in time the evil shall be cured by the adoption of some more satisfactory system of finance and industry.

The wild dealing in the stocks of enterprises which have attained an unwarranted standing in the public confidence is one important cause of these business troubles, and history is full of instances of terrible disaster caused by such overweening trust. Two notable instances of this, which occurred simultaneously in different countries, may be adduced here in illustration. These were the Mississippi Scheme in France and the South Sea Bubble in England, which set the people of these countries financially wild in the early days of the last century, and produced an unwonted crop of disaster as their fruit.

The first named of these, the Mississippi Scheme, was the device of John Law, the son of a Scotch goldsmith, who had established a private bank in Paris, and proposed to the Duke of Orleans, Regent of France, a scheme to liquidate the enormous debt which Louis XIV. had left as a legacy to his country. This debt was so great as to consume nearly all the revenue of the country as interest. Law proposed to convert his bank into a state bank, accept the government securities at par, and pay them with the proceeds of shares in a company founded to operate the gold mines of Louisiana. It is true that no gold had been found there, but that did not check the eagerness of the French public to obtain shares in this wild speculation, which had obtained unwarranted credit. Money poured profusely into the bank treasury, and Law soon declared a dividend of forty per cent. in bank notes. The eagerness now became a frenzy. Continued dividends were declared—all in bank notes. No gold came from the mines, or from the bank, and all the gold and silver of the country disappeared as the issue of paper became superabundant. The government made it penal to hoard coin, but this had no effect. The necessary results of an over-issue of paper money followed Finally the Regent reduced by an edict the notes to half their value, and in so doing at once destroyed public confidence. A dreadful panic succeeded. Thousands were reduced to penury. Insurrection was imminent. The country was flooded with worthless paper, and France for years was an empire of ruin.

The South Sea Company, established about the same time, 1720, was very similar in character. John Blount, its projector, persuaded the English ministry that he could pay off the national debt, if his company were given exclusive rights in all the gold mines and the fisheries which might be discovered in the countries of the South Seas. Parliament granted this privilege. Spain and Portugal, who controlled the countries thus freely given away, shut out the company from the South Seas, but this vital fact was concealed by the directors. The result was like that of the Mississippi Scheme. The quantity of stock sold has been reckoned at £500,000,000, more than all the gold and silver money then in existence. But one result could ensue. The bubble burst, all its cloud-built palaces sank into ruin, and thousands of opulent families dropped into beggary with its fall. In both these cases the only gold mines discovered and worked were the pockets of the credulous people of France and England.

The Tulipomania of Holland, which occurred nearly a century earlier, was stranger though no wilder in its character than the above speculative schemes. The culture of tulips had become a favorite pursuit in that country, and fine varieties commanded a high price. They quickly became objects of speculation, and the prices of choice plants rapidly rose. In time the people grew so infatuated that the whole country seemed engaged in raising and selling tulips. By 1634 the mania had reached its height. A single plant was sold for 4600 guilders. Plants were sold that had never been in existence. Stock-jobbing in hypothetical flowers made its appearance. Fortunes were rapidly won and lost. Finally the bubble burst, and a panic ensued that brought general ruin and despair. In one town alone 10,000,000 guilders had been invested in tulip bulbs of which even the seeds had no existence.

The strange infatuations here described have not been without their parallels in recent times. As instances may be mentioned the *Morus Multicaulis* frenzy in America, stirred up by the design of feeding unborn silk-worms, and the coal oil speculation, in which hundreds of companies were formed for the purpose of extracting the oleaginous liquid from soils as barren of oil as were the souls of the projectors of honesty.

Speculation in recent times has taken forms which could not be very greatly developed with the sparse capital of the past, but which the abundant capital now in existence has swelled into enormous proportions. One of these forms is that known as forestalling, the production of an artificial scarcity in some commodity by purchasing and withholding from the market the greater portion of the supply. Immense transactions of this kind in the less perishable food commodities have been instituted by combined capitalists, aided by an illegitimate and profuse extension of bank credits. By this means the people have been temporarily robbed of vast sums of money, as extra profit on food, for the benefit of speculators. Eventually, it is true, the return ot the forestalled food to the market must cause a corresponding reduction of prices, so that there appears to be no actual loss to the community. But every such disturbance of the natural relations of supply and demand must have an unhealthy and injurious effect.

Stock jobbing, a second greatly developed method of speculation, presents opportunities for transactions of a still less legitimate character. The forestaller must deal in actual goods; the stock jobber deals largely in chances, hypothetical securities which have an existence only on paper. Modern stock transactions largely consist in bets on the fluctuation of prices. No goods necessarily change hands. The quantity of stock bought and sold may tenfold exceed the supply in existence. In short, it is gambling, pure and simple, and the bet on the turn of a card, the speed of a horse, and the rise or fall of a stock quotation are transactions of precisely the same character. The latter form of gambling, however, has become enormously developed, and is dangerous to the whole community from its unsettling of values, its diversion of capital from its natural channels, and its frequently ruinous effect on legitimate business enterprises.

The history of gambling would be a curious one, had we the space to devote to its examination. In character it is the utmost extension of illegitimate business, or transactions in which one party gives material for which he receives no just equivalent. In gambling there is no equivalent. Chance forms the stock in trade, the profit is fixed by previous mutual consent, and it falls to the winning party, who gives nothing in return. Thus in gambling we have the ultimate outreach of the principle of sale at a profit, a transaction in which the commodity exchanged has reached the vanishing point of minuteness and only the profit remains. Direct gambling, which has flourished since the days of savagery, is now on its decline, but indirect gambling, disguised as business, is enormously on the increase. And trickery and deceit, the natural accompaniments of gambling, enter into this as fully as into its simpler forms. Secret operations to cause illegitimate fluctuations in stock prices are skilfully managed, lies of a disturbing character are freely set afloat, and fraud and dishonesty throw their black shadows over the whole nefarious system.

All business transactions, however intricate they appear, may be simplified into one of the two forms above indicated. In the one form there is an actual exchange of goods, each party to the transaction obtaining something that is of more value to him than that with which he parts. This increase in value is his profit. If the commodity with which he parts is in excess he may have to part with it at an actual loss, though the very fact of his parting with it is evidence that he receives something in exchange that is of more present value to him, and hence that he sells at a profit to himself. The loss is in the decline of price between the time of his obtaining it, and that of his parting with it. There is no loss in the actual transaction, unless an inadvertent one. The second form of business is that in which there is no exchange of commodities, and the whole transaction is in profits. This is nothing but gambling, however deeply it may be disguised, and however shrewdly cloaked as legitimate business. But in its modern form it has offered opportunities for the accumulation of vast sums of wealth in single hands with a rapidity that is impossible in any business in which honesty and fair dealing prevail.

The accumulation of immense private fortunes is a subject of interest in this connection, since the distribution of the world's wealth forms a most important element in the history of society. In recent times individualism in wealth has progressed to a degree unequaled in the past, even during the days of Roman control of the capital of the world. This has been rendered possible by the extraordinary productive energy of the present century. Enormous fortunes have been accumulated by the owners of valuable mines, by rich money-lenders or great business firms, and more particularly by daring stock gamblers. The growth of these private fortunes is increasing to an extent that has in it something alarming. Sixty years ago Stephen Girard was looked upon as a prodigy of wealth with his less than eight million dollars. To-day there are hundreds in America much richer than this, and the highest point in riches has mounted to two hundred millions. This, indeed, is not out of accordance with the immense increase in public wealth within the present century, particularly in the United States, whose wealth in 1889 has been estimated at over $60,000,000,000, more than the wealth of the whole world at the middle of the eighteenth century. The increase alone since 1880 is said to be greater than the total wealth of any of the other nations, if we except the five richest. Yet, however great may be this increase, the growing inequality in its distribution is the reverse of satisfactory, and if this should go on at an equally rapid rate during the coming century, it can scarcely fail to lead to momentous consequences.

The bulk of the world's wealth, in such a case, might fall into a few hands, to whom all the rest of mankind would sink into industrial subjection, the sword king of the past being replaced by the money king of the future. The autocrat of old governed nations through his control by force of the property and the persons of his subjects, and his personal authority over the laws. The autocrat of the future may gain a similar power through his control of industry, his purchase of legislatures, and the issue of his private edicts under the disguise of parliamentary enactments. This is the case in some measure at present. It may become the case in a far greater measure in the future, though there can scarcely be a question that it will find its natural limitation in a revolt of the people under any too heavy pressure of the autocratic hand.

The above consideration leads to that of another form of wealth distribution. We have reviewed the wealth of nations in its individual relations. It now needs to be outlined in its communal relations. In every nation there is a considerable degree of communism, as already remarked. The wealth exacted from the whole people by taxation is, in considerable part, expended in the interests of the whole people, and to this extent it constitutes a communal sum. But in all periods much of it has been expended for the private enjoyment of the public servants, or masters, and in enterprises detrimental to the interests of the people. This is robbery, by whatever name it may be disguised, and such robbery has been a principal cause of the misery of nations, and of popular outbreaks, in all ages. If all the money exacted from the public at any period had been expended wisely for the public benefit, a moderate sum being retained for the sustenance of the governing officers, no misery or revolt could have occurred in consequence, since every man would have received his share back in useful public improvements. An instance in case existed in the government of the empire of Peru, in which this form of communism was completely established, and the public money was in great part expended for the public use, the result being a general condition of happiness and tranquillity.

In nearly every other ancient case, however, the money exacted from the community was recklessly squandered, and the people in consequence were reduced to penury. Such was particularly the case in the Roman empire, in which the excessive taxation, and the very slight employment of the revenue in the public service, reduced large tracts of country to a desert state, by depriving the inhabitants of the means of subsistence. This diminution of population though excessive taxation was an important agency in the fall of Rome.

It is only in modern times that the world has gained a just financial status of government. In the republic of the United States the money obtained from the people by taxation is expended for the good of the people as a whole to a degree elsewhere unknown in any extensive community. It is a country in which no money is paid from the public treasury except with the express understanding that there shall be an adequate return in service, there being no governmental sinecures and no excessive salaries. It is a country without a state-supported church, without a monarch to receive what he does not earn by actual labor, without a military establishment designed to support the views of a few individuals, and to be supported by the labor of the people whom it oppresses. The great prosperity of the inhabitants of this country is largely due to the just use of its public funds. These are applied in a multitude of forms, as in the construction of necessary public edifices; in great public works, such as roads, bridges, harbors, the deepening of river channels, etc.; in the postal service; in the enhancement of education, and in many other agencies for the good of the whole people. We have here a state communism which moves side by side with the freest individualism in private transactions. This interrelation of communism and individualism has certainly proved a highly useful condition for the rapid development of nations, though, as above said, it may before many years become necessary to interpose some strong bar to the abnormal growth of individual wealth, and possibly to extend the scope of state communism.

There is another form of modern communism to which a brief allusion is necessary—that which may be called private and local communism. It takes the form of the endowment of institutions of public utility or charity by individuals. Immense sums have been thus applied to the erection of churches, schools, asylums, hospitals, charitable institutions, etc., and other immense sums to their endowment. These form a highly valuable addition to the common capital of modern nations, as they are the result of the wisdom and experience of the most advanced of the people, and their rapid increase in number and in utility is full of promise for the useful employment of the communal wealth of future populations.

The various methods of taxation applied in different ages, by diverse nations, would form an interesting subject in this connection, but is too extensive to be here treated. The cash supplies of governments have been raised by many methods, as by tribute, by plunder, by forced loans, and by taxation direct and indirect, of which the last named is now the one most ordinarily employed. Numerous expedients have been adopted by monarchs in all ages to deplete the coffers of their people, and with varying success. Robbery of the rich, oppressive taxation of the poor, speculative ventures, lotteries, etc., have been tried, all injurious to the nation, however temporarily useful they may have proved to the government. Only in recent times, in which the credit of civilized nations has become securely established, has the raising of money on loan been greatly developed. It is by no means a new expedient in emergencies in which a great sum is quickly needed. History is full of instances of it, while there has been more than one instance in which the repudiation of the debt caused severe financial disasters. The refusal of Edward III. of England to repay the loan made him by the Florentine bankers, caused the great commercial panic of 1345, in which ruin spread over a great part of Italy, through the general failure of financial institutions.

In modern times, however, the good faith of governments in general has enabled them to borrow immense sums from their own and foreign peoples, and the national debts of some nations have grown so enormous and unwieldy in consequence as to be a very serious charge on the industry of the population. These great loans, as above remarked, have been the result of emergencies that called for the immediate collection of large sums, for which any system of taxation would have been inadequate. The emergency, ordinarily, has been that of war. Large city and state debts have, indeed, been incurred in the building of public works, and these debts have sometimes grown unwieldy through waste or robbery by public servants or the unwise rapidity of local improvements. But in national affairs, as a rule, the taxes have sufficed for ordinary public services, and war alone has been the origin of debt. The great growth of modern national debts is, therefore, a result of the immense expense of modern wars, and of the waste and ruin attending all wars.

In semi-civilized times the taxation for war was in flesh and blood rather than in money or goods. Each man was held liable to serve in person in the army. This principle still holds good in a measure, and is the basis of the modern war draft. But it was partly laid aside, even in the days of battle with the sword, and has been largely laid aside in these days of battle with the musket and cannon. The feudal system was based on this principle of taxation. Every baron, with his retainers, owed personal war service, at his own expense, to the king. The first important break in this system was made by Henry II. of England in 1158, in which year he transmuted the personal war service of feudalism for a money payment, and thus established the precedent of the modern enlisted army, whose members are paid by the government from funds raised by taxation or otherwise, instead of being required to serve at their own expense.

War has now become a trade in which money is the principal tool. The funds raised for this purpose are in a different category from those employed in constructive labors. The debts produced represent destruction instead of construction. If the money is borrowed from the people of the country concerned, it indicates a great immediate loss of capital. Its subsequent repaymnt takes no capital from the country, but simply shifts it from pocket to pocket of the citizens, though the poor largely bear the burden of the repayment of the rich, and the effect on public prosperity is severely felt. If the money is borrowed from a foreign country, there is no immediate loss of capital to the warring country. In the latter case the loss is incurred during repayment, since that amount of the capital of the country then flows abroad and disappears from the community, the final effect here being the most severe. One of the main evils of the modern loan system, indeed, is the interest charge which it fastens on the commonwealth, and which must continue until the whole debt is paid, eating deeply into the public funds, and tending to impoverish the people for years, to pay for what is usually the result of the ambitious folly of a few selfish individuals. If a loan has been properly expended in useful public works the enhanced taxation is no loss to the people, since they are but paying for what they receive in the shape of public benefit. If it be expended destructively it is a dead loss, and necessarily diminishes the general sum of public comfort until it is fully repaid.

There is one remaining subject, with a consideration of which we may close this chapter. Overproduction, which has been to some extent the bane of business communities for centuries past, has grown far more so in modern years, from the great increase in the productive ability of mankind, and the continued absence of any concert of action among producers. Of its causes the most effective is undoubtedly the undue extension of business credits. This not only facilitates the production of excess material, but permits that excess to be retained and to accumulate, until, when it is at length precipitated on the community, as it must eventually be, the result becomes disastrous. The excess product, which has long been borne upward on the far-expanding wings of credit, in time falls like an avalanche, and industry lies crushed beneath it. Fortunes are swept away as by the breath of a cyclone, semi-starvation prevails among the working classes, and widespread misery overflows the land.

The effect of such a disaster is always to aggravate the evil to which it is due. As it arises from an excess of production, its proper cure should be an abnormally rapid consumption, so as to bring demand and supply as quickly as possible into harmony. Yet the effect of panic is to cause an abnormally slow consumption. Everywhere the purse-strings of the public are tied, men ignore luxuries and limit themselves in necessaries, and an artificial stringency of demand accompanies the excess of supply. A more effective method to extend the evil could not well be devised, and the over-product, which might readily be consumed in a year of free expenditure, is nursed to choke the market, and depress the working classes for years. Thus what many suppose a meritorious economy in times of panic, and what indeed is a very natural result of public dread, is really calculated to double the evil it seeks to cure, and manufacture a long-enduring trouble out of what might be but a temporary difficulty.

There are, of course, many influences at work in the production of business panics, one of the most potent being the use of capital in speculative or illegitimate business ventures, as the result of the desire to grow rapidly rich through the misfortunes of others, or through lucky hits in stock gambling. But, however produced, every panic rests upon one basic fact: that the supply of goods is greater than the demand, industry being obliged to halt until the excess is consumed. This is an unnatural condition, and one that probably will not arise when the final organization of human society is attained. The possible consumption of food and other products by mankind is enormous. The actual consumption is limited by necessity, not by lack of desire. Were society so organized that every workman, or himself and family, was able to consume what he produced, or its full equivalent in other goods, there could be no excess production, for it is not desire but inability that limits the consumption of the working population. As matters stand, no workman is able to do this, since part of the product of his labor goes to some as profit, to others as rent, to the government as taxes, etc. In the ideal society indicated these receivers of profit, rent, etc., would be required to consume that portion of the annual product which they had prevented the workman from consuming; or in other words, to expend their annual incomes in purchasing the products of labor. If this were done, every person expending his whole annual income, either solely for his own benefit or partly for the support of others, and the government doing the same with its annual revenue, a glut of the market could not possibly arise, even under the present conditions of industry. For the annual income of the community, as wages, profits, rent, interest, and taxes, is the true representative of the annual product of articles of use and luxury, and were it all expended for such articles no excess could accumulate and no panic arise. The income of the community beyond the wages of workmen represents that portion of the product of their labor which is paid to others for various purposes, and which therefore they are not themselves able to consume. If this were consumed by the receivers of such income—that is, if all annual incomes were annually expended for the products of labor—there could be no excess accumulation, and demand and supply would necessarily gain a harmonious adjustment.

Of course, even under such conditions, in the present hap-hazard methods of production, some articles would be produced in excess, since manufacture now goes on with very little regard to the probable demand for any special class of goods, and much labor is misdirected. Chance is depended on as much as foresight, and excess production in certain trades occurs when there is general harmony in the volume of business, as a whole. This cannot be avoided without some concerted method of estimating and providing for the probable demand for any line of goods, a condition which must exist in a properly organized industrial community. If only legitimate business were transacted the condition of affairs above indicated might arise of itself. The opportunity to grow unduly rich by speculation would not occur, and the possessors of large incomes would have no inducement to withhold their excess funds for such purposes. It is highly probable that under such conditions there would be a much more general expenditure of incomes for articles of use and luxury, for charitable purposes, and in productive enterprises, than at present, and the health-giving current of cash, which is now so often withheld from its natural channels, would be kept in active motion for the good of the community.

In an ideally organized commonwealth, what each man receives from the community will be a precise equivalent in value to what he gives the community, this value being determined by the public demand for his services or possessions. Each man will give his labor, either of hands or of brain, his savings, or the use of his property, to the public, in exchange for something of equal value—every form of gambling operation, or of exchange without a just equivalent, being sternly prohibited. The man who prefers ease to labor will gain the enjoyment of ease as his sole payment, and will find no public support in his idleness, charitable endowments or gifts being confined to the benefit of those unable to work, or to purposes of public education or enjoyment.

It need not be said that no civilized society has ever been organized on this principle. In every case a minor portion of the community has received more, a major portion less, than it gave value for. Such a condition of industrial relations is not a natural one, and has never been sustained except by force, and against an unceasing protest and opposition. The power of the sword, which sustained this system of old, has been exchanged for the power of law and of the conservative fixity of conditions which sustain it at present. Yet the resistance to it is more persistent and vigorous than ever before, and this hostility indicates that it is a condition of affairs which cannot permanently continue. All steady struggle must end in some final adjustment, and the principle of natural right must eventually prevail in all human institutions. Harmonious relations of industry may be looked for in the future, but they cannot arise until every man receives the full value of his labor or other services to the public, and no man receives an excess value, the true relation being determined not by an arbitrary fixation of values, but through the operation of the unobstructed laws of demand and supply.

CHAPTER XVIII.

THE INTELLECT AND ITS INSTRUMENTS.

THE preceding chapters have been devoted more particularly to the external characteristics of human development, though not without considerable attention to the unfoldment of the mind of man. The remaining chapters will be more closely devoted to the latter subject, with which, indeed, the whole story of civilization is inextricably bound up. As a preliminary to this it is desirable to consider mental development in its general aspects; to outline, as it were, the map of mentality, before we proceed to fill it in with its special details.

We propose to deal with the science of the mind only generally, avoiding the finer distinctions of the human faculties given in works on pyschology. Looked at in this broad manner the mind presents two primary divisions, those of the hereditary, and the intellectual faculties; the one set derived from our ancestors, the other gained by ourselves individually. The hereditary faculties include the will and the emotions. These are born with us. No man makes his own will, or manufactures his own feelings and passions. The utmost we are able to do in later life is to control these in some measure, and there is ever more or less battle between them and the intellect. The latter, in itself considered, is never hereditary, though its basis may be.

We are born with determinate intellectual capacities, and have now and then the power of making great progress in some fixed direction, though most men are lacking in high intellectual ability. But such powers and tendencies are no part of the intellect. They are only the foundation stones on which the future intellect is to be built.

The intellect—that part of the mind which is the sole property of the individual—is composed of three sets of faculties: those known as the perceptive, the imaginative, and the reasoning. The mind, intellectually considered, is an organ for the reception and evolution of knowledge; which consists primarily in our sensations and perceptions of nature, secondarily in our ideal rearrangement of these perceptions. This rearrangement takes place in two methods, known respectively as the imaginative and the reasoning. These three elements, viz., perception, imagination, and reason, constitute the intellect, and to these we shall devote ourselves, as we have here no concern with the hereditary powers of the mind.

Whatever be the hereditary conditions of the mental organism, its intellectual development necessarily begins in sensation. If it be hindered, by imperfection of the senses or otherwise, from becoming sensible of external facts, its development is correspondingly restricted. If the senses be acute and the mind actively receptive its development is rapid. It becomes stored with ideal images of a great variety of external facts. These images persist in the mind. They constitute memories. As the process continues, each new sensation seems to combine with accordant memories of former sensations.

Such a combination forms an act of perception. It is an ideal image of nature of a more extended character than a mere sensation. The latter makes us acquainted with a single fact at a single point of time. Perception yields us groups of related facts, both of present and of past existence, and thus composes broad images of nature. As the eye, at a single glance, may take in a whole landscape of immensely diversified parts, so the mind, roused by a new sensation, calls up from memory a whole landscape of diversified facts, related in some way to this fresh acquisition.

Such is the basis of intellectual development. By perception the facts received through the medium of the senses are wrought into the basic elements of knowledge. Our perceptions, as they exist in the mind, represent the external world as it exists to our senses, and form the raw material from which the mind must weave its web of abstract ideas. Before there can be any useful intellectual advance a great store of such compound images of nature must be accumulated, the mind becoming aware not only of the disjoined objects and forces of nature, but also of their more apparent relations, affinities, and combinations. It thus becomes, to a considerable extent, an ideal counterpart of the world without. It is built by nature, and symbolically reproduces nature.

Such is the mind in its basic condition—a mirror in which the outer world is reflected, a partial reproduction in ideas of the conditions and forms of the actual world surrounding us. It is with the ideas thus obtained that the reason and the imagination deal, and there is an interesting relation between the action of ese faculties and that of the hands in the manipula-ion of actual material. There are two methods, and nly two, in which the hands and the mind alike can perform their labor, and these methods are essentially the same. It is as if our perceptions were but the facts and forms of outer nature reproduced in finer forms, and moulded by hands imperceptible to our gross senses.

The methods alluded to are the comparative and the inventive. The hands take objects, either as wholes or as parts of wholes, and combine them to the production of new forms. These new forms may be of two kinds. They may be imitations, in other material, of existing objects; or they may be forms which had no previous existence. In the one case we have imitative art; in the other inventive art. The fine arts, for instance, are to a great degree imitative. The sculptor and the painter seek to produce, in other materials, images of existing objects. Yet not wholly so. They form also new combinations of objects, add arrangements of form to nature which it did not previously possess, and in this sense their work is inventive or creative. The inventor attends only to the latter of these requirements. It is his sole purpose to produce new combinations, and to add to the original conditions of nature new conditions, of a superior character so far as human interests are concerned. He is in a true sense a creator. It is not new material he creates, however, but new forms and combinations of old material. The work of his hand adds to the existing diversity of natural condition work of the arts is, therefore, of one ge eral character. It reproduces old forms in new material, or new forms in old material, and in all its work it widens the scope of natural conditions.

This fact is worthy of some attention, because it is a counterpart of the method of action of the imaginative faculty of the mind. The imagination is inventive or creative in the exact sense above described. It combines the results of perception in the manner indicated, dealing with them either as wholes or as elementary parts of wholes. By this process it gives birth to new ideal conditions which did not previously exist, adding to the ideally existing forms in much the same manner as the hands do to the actually existing. In fact the constructive work of the hands is always preceded by a constructive process in the mind. The intellect deals first with images of the material on which the hands are subsequently to act, and gains an ideal concept of the form desired before the hands can shape the actual form, it being the manual part of the labor of construction to bring into physical existence the mental creation.

But the imagination has a much wider scope of action than this. Not all of its concepts can be reproduced in stone and metal. It deals largely with purely abstract images. So far as it is concerned with perceptions of actual materials and forces, its conceptions may be reproduced by the hands, either in works of invention or in fine art productions. But in its dealings with abstract images, the result of the reasoning process, it gains concepts which must remain strictly ideal, since they cannot be made real. This field of imaginative labor yields its results in the form of fictitious narrative, description and poetry. The first two might perhaps be reproduced. The events of a novel might be worked out in actual life. Those of a drama are actually thus worked out. Fanciful descriptions also can be reproduced by the painter. But the conceptions of poetry cannot be so reproduced. They deal with the remote analogies and ideal relations rather than with the actual conditions of things, and their results must remain purely mental. Yet in all the work of the imagination we discover but the one method of dealing with the facts of perception, that of analysis and combination, to the production of conditions which had no previous existence in nature or the mind.

The second method in which the hands can deal with the objects of nature is the comparative. This differs essentially from the constructive. Here there is no effort to remodel the materials dealt with, but the purpose is to observe their resemblances and differences, and thus to classify them, or arrange them in accordance with their actual relations. In doing so it is not necessary to deal only with masses. These may be separated into their component parts, and even reduced to their atoms, if possible. But in doing so they must be divided in the lines in which they have naturally combined. Any arbitrary and irregular division vitiates the purpose intended. The process of hand comparison here indicated has its initiative in the mind, and constitutes a mental process specifically distinct from the imaginative. It is the process of reasoning. Its objects and its methods are alike distinct from those of the imagination. The object of reason is the increase of human knowledge, while that of imagination is the increase of human enjoyment or comfort. The one enables us more fully to comprehend that which exists, the other adds to the breadth of existence. The imagination, as we have said, is a creative faculty. It brings into existence new forms, and thus adds new conditions to the universe. Something which had no previous existence is brought by it into being—made out of old stuff, as the earth is made of old stuff; but wrought into new forms, as the solar system consists of old material wrought into new forms.

Reason deals with the mental stores in a specifically different method. It is not its object to change, but to comprehend, existing conditions, and it as earnestly avoids any disturbance of the actual relations of matter, as imagination seeks to change these relations. Its processes are simply those of comparison and classification. In this way the points of identity and non-identity of objects are perceived, their relations estimated, and the laws controlling them discovered. The same process is applied to forces, and to abstract or ideal conditions, and by this method our knowledge of nature as gained through direct observation is immensely deepened and widened, and the underlying constructive principles of the universe are conceived and abstracted.

In the three faculties here described we have the whole scope of the intellect. It is confined in its operations to observation of the sensible conditions of nature, to the remodeling of these conditions and their combination into new ones, and to the comparison of forms and forces and the discovery of their laws and relations. As the hands collect matter, compare and classify it into its specific kinds, and rearrange it into new forms, so does the mind collect ideal images of matter, compare and classify them, and rearrange them into new ideal forms. But the powers of the mind go far beyond those of the hands. It can deal with forces in the same three methods as the hands deal with matter. It can deal with pure abstractions in the same methods. It can perceive relations, affinities, analogies, between its images, either by direct observation of nature or by observation of its own ideal concepts, which have become to it actual things. And it can deduce the controlling laws of nature from its ideal or real perception of the relations of matter and force. One of its purposes is to gain a complete mental picture of nature as it actually exists. This is done by sensation of separate external conditions, combination of these sensations into perceptions, and comparison of these perceptions in order to comprehend their relations, and deduce from them the underlying laws and principles of nature. To the extent that this purpose is achieved our intellect becomes a representation of existing nature. A second of its purposes is, not to widen our knowledge of nature, but to widen nature herself, to add new conditions to those existing, and plant a new world on the foundation of the old. Here comparison of perceptions is replaced by combination of perceptions, and essentially new forms and conditions result, which may be transferred from the mind to external nature. To the comprehension of existing nature as achieved by the reason, the imagination thus adds new creations. We have but to glance at the vast stores of knowledge accumulated by man, at the great modification of the conditions of the earth's surface which his hands have effected, and at the volume of ideal new production now existing, to gain a vivid conception of the extent of these performances of the human intellect. But nowhere in this work will be found methods or conditions of mental action distinct from those here specified.

Yet the emotional element of the mind plays a highly important part in the manifestations of our intellectual faculties, and some attention to its influence is necessary. There exist in the mind attractions and repulsions analogous to those of the physical world; likes and dislikes which influence our thoughts, affect our beliefs, and have much to do with the exercise of the will. With them is associated another condition which has its counterpart in the hot and cold states of the physical world. Mind, like matter, has its fevers and its chills; it becomes flushed with a fervor analogous to heat, or feels a shrinking chill of terror and dismay. These emotional states powerfully influence the mental operations, and frequently distort them. In the development of the reasoning faculty there has been a steady movement in two directions: one to divest perception of this emotional influence, and to observe facts with utter coolness; the other to get rid of the "personal equation" in the observation of outer things, and cease to invest observed objects with the faculty of consciousness. These results are those towards which science strives, yet it is constantly hindered by the action of the imagination, which tends to give false colors to observed facts, and to vitalize the unintelligent.

The tendency of the imagination is to cultivate emotion; that of reason to abolish it. The novelist, the poet, and the dramatist endeavor to arouse the feelings of their audience, and to bring into activity the attractions and repulsions, the heat and chill, of the mind. The reasoner, on the contrary, seeks to avoid the coloring or distorting influence of emotion, to bring his mind into an equable state, and to weigh his conclusions as bare facts, unmixed with any substratum derived from his own mentality.

These opposite conditions of thought reach their extremes in poetry and science, the poles of the mind. A brief comparison of these unlike phases of mental expression may aid to a conception of the characteristics of thought. The poet, like the scientist, observes the relations of nature. But the relations with which he deals are those of analogy or correspondence, yielding metaphor and simile. Those observed by science are the relations of identity and non-identity, yielding classification. The poet deals with nature in groups, and combines the elements of his landscapes in accordance with the laws of harmony. The scientist disintegrates nature, and arranges its units in accordance with the laws of attraction and repulsion. The one observes nature with the eye, as a complete picture; the other with the touch, distinguishing all its parts. The poet constantly pictures and personifies, and fills all nature with his own consciousness. The scientist devitalizes nature, and brings all things down to the level of physical law. The one uses all the graces of rhetoric, to give a charm to his work. The other avoids rhetoric, as tending to vitiate the value of his. The one sedulously cultivates the emotions, and makes every effort to awaken the feelings and passions of his audience. The other earnestly avoids emotion, as unfitting the mind for the clear recognition of truth. It is the object of the poet to please and to move; that of the scientist to teach and to prove. The one sees nature as reflected in the mirror of the imagination; the other as it actually appears to the eyes.

Such are the opposed characteristics of the polar regions of intelligence, the domains of poetry and science, which form the ultimate outreach of imagination and of reason in their methods of dealing with the results of perception. Between these lie all the other forms of literature. They are all based on perception, and to some extent confined to it. But in reaching above perception they mingle the characteristics of imagination and reason, as above detailed, in various degrees, and thus become compounds of all the qualities of the mind. Poetry, in its complete unfoldment, presents us imagination divorced from logic; science, in its ultimate outreach, logic divorced from imagination; while the broad intermediate field of literature is made up of the results of perception, imagination, and reason, in variously combined proportions.

If now we consider the mental development of mankind, we shall find that the elements of the intellect here named successively developed and matured, through a long process of evolution. Perception became highly developed while the superior faculties were in embryo. This faculty is possessed by man in common with the whole animal world. It is the grade of mentality to which the lower animals are mainly confined, though its powers have been greatly increased by man. In imagination and reason man stands almost alone. The inferior animals, it is true, do not seem quite destitute of these faculties, but they possess them only in their immature stage. Many instances of reasoning powers have been observed in animals in a state of nature, and more marked and striking ones in domesticated animals, yet the reasoning here displayed is but the most obvious deduction from perceived facts, the first step into the great kingdom of logical thought. Some few instances of an imaginative faculty have also been observed, yet there is nothing on record to dispute man's proud pre-eminence in these mental powers, or to credit the lower animals with anything beyond their embryo development.

Very probably man, for long ages after his occupancy of the earth, was but little beyond the other animals in reason and imagination, his intellect being chiefly in the perceptive stage. Such is still the case with all the lower tribes of mankind. Savages are quick to perceive the more superficial facts of nature. Their senses are well developed, their powers of observation alert and keen, their organs active in response to the warning of the senses. Yet their intelligence is of a low order, they perceive only the most apparent characteristics of objects, and their quickness of responsive movement indicates a predominance of the instinctive over the reflective constituent of the mind. The development of the intellect leads steadily away from this condition. Reflection intervenes more and more constantly between sensation and action. The reason is called more habitually into play, and though civilized man may perform as great a variety of instinctive acts as the savage, yet his reflective powers are much superior. In looking at an object he may fail to perceive its superficial characters as clearly as the savage, but he sees in it numerous conditions to which the latter is blind, and gains from it plentiful food for reflection in addition to that impulse to action which may alone affect the savage mind.

The progress of mentality is solely in this direction of deeper and fuller scope of observation, and of increased reflection. It is in this that the savage surpasses the lower animals, as the civilized man the savage. In quickness of perception and instinctive rapidity of muscular response there may be no real difference in the three cases. But to the extent that observation widens and reflection intervenes, the muscular response is controlled by new influences, and may take new directions. The fingers of the musician respond as readily to the sensation derived from the touch of the piano keys as do the limbs of the savage to a perception of danger. But what centuries of reflection and mental labor intervene between the two types of muscular response! The savage, indeed, is mainly governed by superficial perceptions, while his reason and imagination continue crude and immature. He is greatly devoid of the power of abstraction, or of gaining conceptions which have no direct physical counterpart, which is the groundwork of all the higher labors of the mind.

In the development of the savage intellect certain inevitable mental conditions appeared, as natural consequences of intellectual growth, and these have had a vital bearing upon the whole course of human history.

The primitive man must have been completely incapable of scientific discrimination. Probably for a long period he observed facts without an effort to comprehend them. But as soon as the budding reason was brought to bear upon the problem of the nature of motion and force the original scientific theory came into being, namely, that motion is life, and its instigating force is consciousness. This theory was inevitable. Man always tends to make his own body and mind the standards of nature. Even with the acuteness of modern science this tendency partly exists. Originally it must have been all-powerful. The first thinkers were quite incapable of gaining a conception of two kinds and causes of motion, and naturally ascribed all the motions of matter to an innate life, like that which they felt moving within themselves. This theory, indeed, has its origin in the lower fields of life. Several cases are on record in which dogs and other animals have manifested fear of a peculiarly moving object, with the evident belief that it was alive. With the more actively thinking savages the theory grew dominant. To it must be ascribed the earliest elements of religious thought. In fact it exerted a controlling influence upon the progress of religion until a late period in the history of the world.

The fact that an act of reason must originally preside over a deduction does not prove that all subsequent returns of that deduction are reached through distinct processes of reasoning. A conception of nature originally gained by the reasoning process becomes afterwards, in the great mass of cases, received as a perception. It is communicated from mind to mind, and accepted as a fact without question, being rarely confirmed by a parallel process of reasoning. Only when a doubt is entertained is the reason brought into activity. The doubt indicates that the mind has perceived an inharmony between the theory and the facts. The new act of reason may confirm the theory, may extend it, or may replace it by a new theory. The same rule holds with imagination. Each act of the imagination adds some new condition to nature, which becomes to all succeeding minds an object of perception. The imagination may again act upon it, to the formation of a new conception, but it only occasionally does so, and as a general rule perception is the leading element in mentality, while the higher faculties are of comparatively rare activity. This was far more the case in the past than in the present period, the mind of man having now been called into much more active exercise.

During a long epoch of slow progression the perceptive acuteness of man acquainted him with an ever-extending range of facts. He became expert in numerous arts arising from the needs of his existence, while new wants ever arose as old ones became gratified, and his perception unfolded as his mental horizon widened. Throughout the hunting and pastoral stages of existence human knowledge slowly increased, and more rapidly after the art of agriculture was attained. The superficial field of nature was gleaned of its facts, so far as they forced themselves on man's observation. The primitive arts of manufacture and architecture were gained. Numerous industries were devised. Civilization, with its many arts, its developing institutions, and its growing knowledge, emerged from barbarism. And still human mentality continued very largely confined to the field of perception. As yet, only a groundwork for the coming great development of the superior mental faculties was laid.

While the primitive reason was gradually extending its scope of exercise, and advancing in its ideas about the forces and laws of nature, the imaginative faculty was not dormant. It invested the deific beings, with which man's original logic had filled all nature, with new attributes and life histories, and wove its conceptions into an extended series of stories of preternatural adventure. The legends of the early nations teem with such narratives, and many of the wildly imaginative conceptions of the present day can be traced to an origin in this infancy of civilization. Hosts of mythologic narratives, fables, fairy stories, tales of the supernatural, folk-lore traditions, and the like, are still extant, survivals from the time when the wonders they detail were but echoes of the sober beliefs of mankind. Such stories of the supernatural abound in the legends of the more advanced savage tribes and of barbarian communities, and form the staple of the imaginative conceptions of all undeveloped civilizations. Abundant instances exist in the mythologies of Greece, Egypt, Syria, and Northern Europe; in the numerous stories and poems of the supernatural extant in Brahmanic and Buddhistic literature; in the extravagance of the Arabian tales; in the fables and folk-lore of all the ancient nations; and in a multitude of similar conceptions of the preternatural which have made their way down to our era from the primitive days of civilized mankind.

From the period mentioned there have come to us few or no narratives in imitation of real life. The mind of man seemed bewildered by the host of invisible and uncomprehended energies which surrounded it. The details of actual existence were sober and unattractive in comparison with these ideas of the supernatural. The human seemed insignificant as compared with the superhuman. Fear of the unseen was the strongest controlling influence on man's mind, and nothing was relished by the hearer that did not conform to his conception of the magical organization of the universe; while the imagination of the narrator, wandering with glad freedom in the unlimited world of the supersensual, played with its wildest fancies in sober belief that it was merely producing ideal images of actual facts.

The religion of this period occupied itself far more with cosmogony than with philosophy. World-building of the most extravagant character was freely indulged in. Heavens and hells of extraordinary formation were constructed. The domain of earthly time was immensely extended, and early man credited with millenial length of life. Heaven was peopled with strange hierarchies of celestial beings, the utmost conceivable expansion of the imagined divinities and demons of the air. The biographies of these beings were profusely detailed, and odd fancies of their relations to mankind conceived, until mythology became an intricate web of interwoven threads of fiction, which it is impossible now to disentangle.

Such was the outcome of the labor of man's higher mental faculties in this archaic stage. His thoughts dwelt almost wholly in the region of the supersensual, in conformity with the errors of the early conception, which beheld everywhere in the action of the natural forces evidences of intelligence, of malice and benevolence, and of abilities transcending those of man. This conception of the constitution of nature gave rise to a vast body of mythological and magical lore, which fettered the minds of men long after they had passed the primitive stage of mental development, and which has sent its waves far down into our own times, though we have lost the mental strain which can accept it with belief.

As civilization advanced, the imagination slowly descended from the clouds, and found a footing upon the earth. Belief in the supernatural grew weaker, and pride in the dignity of human life increased. Thought began to occupy itself with man, as well as with the gods and demons, and imaginary transcripts of real human life appeared. They were long, however, strongly tinctured with the supernatural, and man bowed his head in unquestioning fear before his deities. This may be seen in the poetic fiction of the Egyptians, the Hebrews, and the early Greeks. In the interesting episode of the life of Job, we behold man still a mere plaything in the hands of the superior powers. In Homer, first of all, do we find humanity daring to enter into contention with the gods, and to assert the dignity of human life and valor even in the face of the heavenly powers.

This is the key-note of the Hellenic character. Man was the God of the Greeks, whom they worshipped in their deities, and of whose native importance they were fully convinced. In this realization of the lofty position of man in the created universe the belief in the old figments of mythology rapidly weakened. The gods were shorn of their awful and infinite attributes, were brought down to earth until they stood but a step above man, and were played with by the ardent fancy of the Greeks until they became utterly ridiculous, when considered as the controlling powers of the universe.

It was thus that the imagination reached its final stage, that of the production of ideal counterparts of visible life. For ages it had dealt with the invisible, and finally produced the mighty mythologic deities as the outcome of its progress in this direction. These deities the Greeks haled down to the earth, looked them full in the face, saw through the transparent fictions of which they were built, and discarded them, or played with them as pretty figments of the fancy of their ancestors. The awful gods of the earlier world became the metaphorical adornments of the Greek poets, whose belief in them as real beings had declined. And as this decline took place the imagination of man entered its modern field of exercise. Actual life was imitated in song and story; nature as it appears, and the aspirations of man's mind, became the themes of the lyric poet; the dramatist dealt with the tragical events of human existence, or caricatured its ludicrous aspects; and the artist, with chisel and brush, wrought ideal copies of the human form. The imagination had become sobered, its wild wings pruned, and for the first time in its history it was content to dwell on the earth with man, instead of sporting with the elves, demons, and deities of an invisible realm.

This change closely corresponded with the modifications which had taken place in the theory of the universe, through the early exercise of the logical faculty. The history of the development of the reason is an interesting one. Its earliest conception of the nature of things seems to have been, as above said, that motion is life, and that there is thought, malice, and good will in inanimate things. This in time broadened into the theory that the heavenly bodies possess human consciousness, feeling, and passion. As the gods thus ascended to loftier spheres of action, their predecessors were shorn of their deific attributes. Man gradually perceived that the motions of minor objects differed from those of the human body, and were caused by forces outside the objects moved. It became evident that all motion could not be of one species, and that there were animate and inanimate objects. This was the second theory of the universe gained by the developing reason. As the clouds, the lightning, the seas, and the earth became gods, sticks and stones lost their deific attributes and became lifeless matter. As the sun, moon, and planets became gods, the clouds, seas, etc., were slowly shorn, by reason, of their deific power. Finally, when the sun and planets became but symbols of the gods, the philosophy of the universe attained its greatest expansion. The climbing reason of man had pursued deity step by step upwards, from the lowliest to the sublimest objects of the universe, each of which successively lost its godlike attributes, until the gods became entirely spiritual in man's conception, and matter sank back into the domain of the physical.

But not wholly so. Something of its deific condition, some shadow of its old dignity, still clung to matter, particularly in the religious creeds of the ancient civilized nations. Reason had not yet gained its scientific phase of development. We may review its condition in two of the most diverse of the early nations, the Hindu and the Greek. In the philosophy which the active reason of the former people gradually devised, the gods no longer dwelt as limited spirits within the bodies of the universe, but all the universe as one grand whole was God, some of whose essence permeated every existing object. Consciousness did not exist in the inanimate, but a portion of the deific nature did, and that which had once been looked upon as a separate and individual god was now regarded as a component part of the single universal spirit. The comprehension of this theory, of course, was confined to the thinkers of the nation. With the ignorant populace the idols were still gods, and continue so to the present day.

In Greece the unfolding reason of the thinking class devised a different philosophy. The popular religion had become puerile, and offered no basis for philosophic thought. It was but a refined fetichism, in which not only sun, moon, and stars, but brooks, trees, groves, and hills, were individual gods. The process above described had made considerable progress. The more familiar objects had lost their deific consciousness. Not all groves and streams, but certain groves and streams, were gods, or dwellings of the gods. Reason was climbing upward, and the deities had long since reached the stars, but their humbler representatives had not yet left the earth. Dryads and hamadryads, naiads and tritons, yet dwelt on earth and in the sea, and the highest altitude to which the winged reason of man had elevated the court of heaven was to the summit of Mount Olympus.

The indigenous development of this civilization was suddenly arrested. Influences from the older civilizations of the East broke in, and hindered any continued native unfoldment of religious philosophy, like that which India presents. Thought was actively awakened, and was lifted to a level far above that which religion had attained. Greek reason broke completely away from Greek mythology, and began to build theories of the universe more in accordance with its degree of mental unfoldment. These theories we have already described, but they present one important feature to which our attention is now called. The old view of the conscious life of matter had led to pantheism in India. It led to atheism in Greece. The long-sustained theory of primeval man, that motion is life, was for the first time definitely denied in its entirety by the philosophers of Greece, and the scientific theory was finally evolved, that force and motion have no immediate relation to life, and that animal life is but one of the motion-producing forces, of which others of an unconscious nature exist.

In fact the final outcomes of the Hindu and Greek philosophies approached each other. The Hindu, while claiming that all nature was spirit, eventually denied consciousness to the universal spirit. The Greeks, while at first claiming that all nature was matter, found themselves eventually forced to admit the existence of spirit, but their universal spirit was unconscious, or but vaguely conscious. By two widely different paths human reason had approached the same goal. In all succeeding efforts to establish a deductive philosophy of the universe no specifically new thought has been evolved. Whether matter or spirit exists alone, or they exist conjoined; whether the universal is conscious or unconscious; what are the relations between spirit and matter; such are the questions which have been endlessly tossed back and forth, without a definite step being taken in advance.

It was in later Greece that the reasoning faculty of mankind first began its scientific development, by getting rid of the theory that had so long checked its progress, namely, that man's mind and body are the measuring rods of the universe. It was necessary to appeal to facts as the only true groundwork of logic, and to consider force as something to be studied apart from the "personal equation" of the mind, before science could arise. Aristotle was the first definite exponent of this principle, and with his laws of logic and theory of induction the thought system of the ancient world ended, and that of the modern world began. The primitive theory, that motion is life, was the ruling force in all the world of the past. It reached its termination in the philosophies of India and Greece. The Aristotelean theory, that the secret of the universe is not to be sought in the depths of space, but in the objects and conditions of the earth, has grown to be the ruling force in the world of the present. It gained little foothold in Greece and Rome. The dead weight of milleniums of ancient theory was not to be flung off at a throe. The influence of the maxims of Aristotle died out, and deductive philosophy resumed its sway in the schools of Greece and Rome.

Science properly began its reign in the Alexandrian schools. Thence it was taken up by the Arabians, and in time handed down to modern Europe, without a definite break in its course of development. As the philosophical method of thought ruled supreme in the past so does the scientific in the present. It is to-day widely recognized that the correct perception of facts is a necessary preliminary to any valuable reasoning, and the most active efforts are made to eliminate imagination, or incorrect perception, from the basis of logical induction. Sharp criticism assails any proclaimed fact, and it must be absolutely proved before any generalization based upon it will be fully accepted, so that a weakly founded or incorrectly reasoned theory has but a short life in this era of scientific activity. Of old the imagination was freely employed to eke out deficiency of facts. Now any infusion of the imagination into a train of reasoning is quickly exposed by a keen weighing of the evidence, and a critical judgment that has no reverence for anything but established facts. This scientific method is also making itself felt in all the details of ordinary life and business, and giving them a new precision and a solid basis of activity, which they lacked in the era of philosophical thought.

Such is a brief delineation of the mental development of mankind. Perception, or the compound of sensation and memory, was its earliest stage, and this has continually unfolded and grown more exact, unto the present time. It early reached, through the pristine activity of the reason, a mythical stage, in which man naturally invested all things with a life and consciousness similar to his own. It has now reached a scientific stage, in which motion is no longer looked upon as life, or accident as a result of malicious intention.

But the development of the perceptive faculty was long retarded by the activity of the imaginative. Man largely replaced observation by invention, all the higher energies of the mind were given over to the direction of fancy, and knowledge of the facts of nature progressed but slowly in this effluence of the imagination. This latter faculty, also, had its mythical era, based on the errors of primeval perception. It has now gained scientific precision, and forms its compounds out of facts as at present understood. The days of folk-lore, fable, and mythology are over, in civilized lands, and the actual is the basis of the imaginative. Though the undue growth of the faculty acted to check observation, yet this was a natural phase in the development of the mind, and quickened its powers to an extent which they might not otherwise so soon have reached. When reason at length fully unfolded, and observation became again active, the mind had become strongly energized through its long exercise of the inventive faculty, and was ready to handle its new powers with skill and strength. The epoch of imaginative evolution was not wasted. It had given the mind a grasp and an outstretching boldness which it might otherwise have lacked.

In these days of science the activity of the imagination has little declined, though it has become sobered by the restraint of the actual. One of its most important fields of exercise to-day is that of mechanical invention. The mind combines its knowledge of the characters and relations of materials and of mechanical principles, and reproduces the results in matter, to the formation of diversified and useful machines. Its immaterial inventions have grown similarly sober and practical. Fiction is ceasing to deal with the unreal, and seeking to produce counterparts of actual life. Poetry and art are following the same path, and making sober fact their basis. Yet they have developed a critical analysis, and a down-reach into the deepest springs of abstraction and the most involved motives of the mind, which lift modern thought far beyond the superficial concepts of the past. The progress of the intellect has been steadily from the superficial towards the central, and from the external form to the animating spirit, a fact clearly manifested in modern religion, which is rapidly passing from the old form of sense worship to the new form of spirit worship, and replacing creed tyranny by spirituality.

The development of the reasoning faculty of the mind has kept pace with that of perception and imagination. It, too, had its mythical age, in its original theory of force, which persisted throughout the age of mythological philosophy. It has long since entered its physical age, in common with the other mental faculties. In this field it has given rise to a highly valuable series of scientific theories, which represent nature with some near approach to truth, and have deeply probed the moving principles of things, in a broad pathway of discovery that is solidly paved with determined facts.

In this connection some brief reference to language, the symbolic reproduction of nature in the mind, is desirable. The simple results of sensation can undoubtedly be comprehended without mental symbols, but they can be imparted to others most readily by the aid of symbols, and thus words naturally arose to represent things. This is all that pure perception requires, the etymological forms of language. But as soon as reasoning began it became necessary to combine words, a logical compound of symbols being requisite to represent the natural compounds of things. The qualities and relations of things were indicated by qualifying and relational words, and in time the mind became filled with a vast array of these symbolic forms, whose combinations represented those of nature, being logical to indicate the results of reason, and rhetorical to indicate those of imagination.

Thus in recalling the conditions of nature, as they affect the mind, to consciousness, we customarily do so in their symbolic forms. Yet we comprehend nature but imperfectly if these combinations of words do not convey pictures to us, if we cannot look through the printed page, and behold pictured in its collocation of words a collocation of things and energies, a reflection of some aspect of nature in the mind like that of a form in a mirror. This, indeed, is the object and ultimate of the human intellect, to mirror the universe in the mind, and our reason is constantly striving to make the mental landscape a continually broader and deeper transcript of the sum of things which surround us. The imagination at the same time is seeking to add new conditions to the universe, to broaden and deepen the scope of existing nature. In these lines the mind of man is ever expanding, reflecting a wider and wider array of facts and principles; and bringing new ideas into existence by its inventive power, which in their turn may be reproduced in matter, and take their place as physical facts.

The mind of man makes itself evident externally in two principal methods, by spoken and by written language. There are other methods of manifestation, but the higher conditions of mentality are indicated only in speech and writing, and, as already stated, in the productions of art and industry. Spoken and written language are now essentially one, two sides of one common art, but in their origin they were widely separated. They are streams which rose from remote springs, but have flowed constantly into closer proximity, until now they move in a single channel. Their development has been a process of analysis, from original generalized conditions, the character of which may be briefly stated.

Verbal expression began in vocal sounds, to which definite meanings were gradually attached. These sounds had a twofold origin, some of them being natural to the vocal chords of man, others being imitative of the voices of animals or the noises of inanimate nature. The language of the child indicates this double origin, it being made up partly of imitative sounds, partly of tones natural to the human organs of speech. The language evolution of the child begins with the latter and continues with the former, the imitative sounds being necessarily the more difficult, and such may have been the case in the infancy of mankind. In time, as the vocal organs of man grew more flexible with use, there was probably produced a considerable variety of different sounds, each with its special meaning, the root forms of all subsequent languages.

No language exists to-day in this primitive condition. The progress of language since that period signifies an immense amount of human labor and invention, not surpassed, if equaled, by the productions of man in any other direction. The facility and variety of our present powers of vocal expression are due to ages of mental labor by our forefathers, not the less great because performed unconsciously or without special intention. The steps of this development we can but barely outline. The story is far too diverse to give in any detail.

Though the primitive language of man has vanished from existence, it has not failed to leave some impress of its character upon its successors, and from these we can deduce certain conclusions concerning it. Undoubtedly, as man spread over the earth, and his intelligence unfolded, he must have needed an increasing number of words. He entered new situations, and became exposed to new dangers. His social instincts grew more declared. His voice was more and more constantly called into use, to warn against danger, and to convey other intelligence. Yet the lack of vocal flexibility must have hindered any rapid multiplication of words, and undoubtedly a parallel process, the extension of the significance of existing words, was widely employed. Old sounds were adapted to new purposes, and each of the words in use gained several dissimilar meanings. These meanings, however, were vague and unspecialized and conveyed no definite information. This is not mere guess-work. All languages yet retain something of this archaic character, and the most simplified language, the Chinese, is strongly marked by it. Language is transparent to a remarkable degree. We can look far down into its crystal depths, as into a pool of clear water, and see the rolled pebbles of human speech which form its bottom. Intricate as it has become, numerous as have been its changes, the roots of the far-shadowing tree are still visible, and we can hear the voice of primitive man sounding in the words which we daily use. Several of the families of language resist analysis. But in two families, the Aryan and the Chinese, analysis has proved comparatively easy. From the complex forms of Aryan speech the cloak of suffixes and affixes has been stripped off, and the root forms laid bare. No such process is necessary in the case of the Chinese. Its words are still roots, and retain many of their original characteristics.

It is doubtful, however, if any of the primitive roots of language still exist. Most of those which we now know were very likely of subsequent origin, while many may have arisen through the breaking down of compound words. And as sounds have changed, so has their significance. The roots of modern languages have a breadth of meaning and a depth of abstract import which are certainly not original. Primitive words were narrow, local, and superficial in meaning. They were generalized in significance and conveyed but limited and vague information. They had none of the definiteness and suggestiveness of modern words, but were the crude coinage of minds that were destitute of intellectual expansion, and incapable of expressing any formal proposition.

In the development of language it is probable that for a long period the only progress was in the increase of the vocabulary. This may have been added to by several methods. One was by the direct coinage of new words,—a process now seen in the word-making of children and savage tribes. A second was by the application of old words to new things, single utterances being given several meanings, whose distinction was often indicated by peculiarities of tone or gesture. This method is commonly practiced in Chinese speech, to whose limited vocabulary it gives a wide range of expression. The first process in language-making was, as we have said, the formation of a vocabulary. The second was that of the adoption of grammatical expedients, the analysis of thought into its units. The primitive words were generalized expressions, each of which conveyed a whole statement. Thus when our remote ancestors called out their word for "lion" it told a whole story to their hearers, who knew at once that a lion was visible and that flight was necessary. We still use words in the same way in cases of danger and excitement, preserving the primitive method side by side with our more advanced ones. Our ancestors had but the one method, and each vocal utterance was to them a proposition in embryo. At a later date, when man began to analyze thought, and limit the significance of words so that each should express but part of a proposition, and finally only a single grammatical unit, new expedients became necessary. There were two absolute requisites in this extension of speech: one, a limitation of the meaning of words, the other, the arrangement of grammatical units into complete sentences. The sentence necessarily remained the unit of thought, but it ceased to be the unit of speech. As the symbols of thought became broken up into their elements, a proposition could no longer be conveyed in a single sound, but needed a combination of separate sounds.

Several methods were adopted for this extension of the scope of speech, the most primitive being that of the Chinese family of language, in which it is of interest to perceive that, to a certain extent, one expedient served both purposes. The root words were arranged in sentences, and their meaning was limited by their position in the sentence. This is the character of existing Chinese. A word which, standing alone, is at once noun, verb, adjective, and adverb, becomes only one of these in the sentence; its particular grammatical significance being indicated by its position. In fact Chinese has no grammar in the ordinary sense; it has only syntax. The grammatical significance of its words is dependent upon their syntactical arrangement.

In the languages of the American Indians an equally primitive, but essentially different method was adopted. The sense conveyed by the verbal root was limited by modifying appendages, each of which affected the significance of the compound. There was no division into separate words. Each word was a sentence as before. But the original monosyllables became complex polysyllables. In the modern Indian dialects words of stupendous length are thus produced, the sense being more accurately defined by each addition, until intricate propositions are conveyed in single utterances. It is a cumbersome extension of a primitive method of speech, sufficiently expressive for Indian needs, no doubt, but comparing with the languages of modern civilization much as the Greek notation does with the modern decimal system. Analysis has taken but its first step, and the Indian method seems an immediate derivation from primitive speech. It pursued a directly opposite course of development to the Chinese, the one that of word-building, the other that of sentence-building. They are equally primitive in method, and equally capable of considerable development, though neither would be well adapted to the linguistic demands of an advanced civilization.

In the other families of language the analytic process has gone farther. Modifying particles are used to limit the meaning of words, but they are not so intimately associated with the root as in the American tongues. To a partial extent they are capable of standing alone. In the Chinese, such particles are used simply to extend the vocabulary, new words being manufactured abundantly by the addition of determinatives to the root. In the Mongolian or Turanian family of languages, on the contrary, this method is employed as a grammatical expedient. The addition of particles to the root limits its grammatical sense, and reduces it to a fixed element of a sentence. A Turanian proposition is made up of several of these verbal units. It is not a compound of unchanged roots, like the Chinese; nor of a single root with numerous modifying particles, like the American; but of a number of modified roots, each with a limited grammatical significance. The Turanian particles are not full words. They have lost, if they ever had, the power to be used alone, and are only significant when attached to the roots, to which they give a precise and definite meaning. Yet they are not indissolubly welded to these root words, as in Indian speech, but are separable, and are unchanging in form, their only variation being a euphonic one. The Turanian linguistic method is synthetic—not to the extent of the American, in which verbal synthesis reaches its utmost development—but to a considerable extent.

In the most flexible family of speech, the Aryan, synthesis and analysis are associated, and by their combined activity have given a remarkable expressiveness to this linguistic method. The Aryan principle is that known as inflection. It was probably derived from the Turanian method, but has taken a long step in advance of its model. Modifying particles are still used to limit the grammatical significance of roots, but they are not rigid and separable as in Turanian speech. They are welded to the root, forming with it one word, and are capable of readily changing their form. In Aryan speech grammatical analysis has reached its utmost unfoldment. The roots no longer stand apart, like the nobility of the kingdom of speech, with disfranchised slaves to serve their needs. They have become welded with the modifying particles, have lost their forms, and in many cases have so changed that it is not easy to trace them to their origin. The Aryan languages are made up of permanent, not of temporary words, like the Turanian. Each word has become a distinct unit of a sentence, and can be shifted from part to part of the sentence without changing its meaning—thus differing from the Chinese. And the root has lost the dominating importance which it possesses in the Turanian. The Aryan method has, indeed, a distant analogy with the American, in which also the root is welded with its modifying particles and vanishes in the compound. But while each American compound is a complete proposition, each Aryan is but part of a proposition, and needs to be combined with others to give full expression to an idea or statement.

There is still another family of speech, of a curious and highly interesting character, the Semitic. It is classed with the inflectional, but its inflection is radically different from that of the Aryan. In the latter, inflection ordinarily indicates a change of form in the modifying particles; in the former it signifies a change of form in the root. The Semitic inflection, in fact, impresses us as one of the primitive speech expedients, not the outcome of a long series of steps of development, as in the Aryan. In the Semitic the root remains as dominant as in the Chinese; but while in the latter it is rigid in form, in the former it is remarkably flexible. In the Chinese the grammatical sense of the root is indicated by its position in the sentence; in the Semitic by a change in its vowel. In the existing Semitic languages each root consists of three consonants. These, standing alone, have a generalized meaning. But by combining them with different vowels they can be transformed into numerous distinct words, each of which is a grammatical form, a definite part of a proposition. The expedient of affixes and suffixes is also employed in the Semitic, but not extensively, and there are no long compound words. The method of root-inflection is the ruling principle, and in it we perhaps possess a highly primitive expedient, possibly reaching back to as early a stage in the evolution of language as the syntactical method of the Chinese. This, it is true, is not the general opinion of philologists, who seem to regard the Semitic as nearly parallel with the Aryan in linguistic development. Yet in the one the root retains its primitive dominance, and grammatical analysis is attained by a simple and probably very ancient method; in the other the root has almost vanished, and indications of development through the adoption of successive expedients are apparent.

Aryan speech, moreover, has shown possibilities of development far beyond anything seen in other families of speech. The Chinese, the American, the Mongolian, and the Semitic alike long ago reached the limit of progress in their particular lines, and have stood still for ages. They cannot go farther without going back, and breaking up their rigid fixity by the adoption of some new and radical method. Aryan speech, on the contrary, has manifested a power of indefinite development within itself. It is, as we have said, at once synthetic and analytic in character, and to this is due its continued evolution. From its origin it has possessed the double power to build up and to break down, and these powers have been continually in exercise. For a long period, however, the primitive synthetic tendency, the building-up power, continued in the ascendant, and languages of highly complex structure arose. Examples of these we have in the Sanscrit and Greek, and to a less declared extent in the Latin. Of modern languages this tendency is most declared in the Russian, which is still vigorously synthetic.

But during the modern period the breaking-down, or analytic tendency has been active in nearly all Aryan tongues, and has given us languages of much simpler structure than those of the classic past.

The vigor of word-combination had no sooner grown inactive, checked by the complex conditions it had produced, than the analytic tendency rose into prominence, and began to disjoin the cumbrous forms of ancient speech. The original tendency had been to make each word a net, stretched to catch as much of the sentence as possible. The later tendency was to break up these compound words into their units, and make each element of the sentence a separate vocalization. The pronoun was separated from the verb. Particles were torn off and used separately. Auxiliaries came into more frequent use. There was a general inclination to simplify speech, and produce what may be called the alphabetic units of the sentence.

This did not proceed very rapidly in the ancient civilizations. Literary culture prevented any rapid modification of forms and methods. But during the era of mental gloom that succeeded the downfall of the Roman empire the analysis of language proceeded with remarkable rapidity. There were two causes of this. One was the rapid dialectical change that followed the loss of literary cultivation. All authoritative standards of speech had vanished, and there was nothing to prevent extensive modifications. A still more potent influence was the forcible mingling of languages of different origin. In France, Italy, and Spain the Latin held its own against the ruder speech of the German conquerors, but lost much of its inflectional richness. The complex words, with their intricate significance, could not be readily handled by their new speakers. They became broken up into their elementary components. When later, with the expansion of thought, it became necessary to express more delicate grammatical relations, there was no regrowth of inflectionalism. The old synthetic process had lost its force, and auxiliaries and words of relation came more and more into use. Complex ideas, instead of being condensed into single words, were expressed by groups of words, and the analytic in great part replaced the synthetic habit of speech.

This took place to a much less extent in the original German, which suffered none of the disturbing effects of transplantation to a new people and intermixture with a foreign tongue. Yet though German retains many relics of its ancient condition, it has greatly yielded to the influence of analytic change. But it is to the English that we must look for the fullest development of this modern tendency of language. The analyzing force was actively at work on the Anglo-Saxon before its intermixture with the Norman element. The tendency to the reduction of words to monosyllables, the loss of inflectional expedients, and the employment of separate auxiliaries, pronouns, prepositions, etc., had been long active in that dark age which preceded the Norman conquest. After the latter the analytic energy became still more declared. The forced intimacy of two modes of speech, each of which affected and modified the other, each already tending to verbal analysis and largely destitute of literary cultivation, could not but yield an important result. The synthetic forms rapidly disappeared, and there finally emerged a language of elementary forms, largely monosyllabic in structure, almost devoid of inflection, and its words to some extent possessed of the vague significance of the primitive elements of speech.

Such is the English of to-day, the language on which evolution has produced its fullest effect. It is singular to what an extent this process has brought it into analogy with the Chinese, in its monosyllabic structure, its loss of inflection, and its partial replacement of grammatical by syntactical arrangement of the sentence. This is a decided movement towards that simplicity which marks all highest results. All the advantages of the old complex system are retained, while most of the disadvantages have been discarded. The inflection of nouns has almost vanished. That of adjectives has quite disappeared. Only in the pronouns does inflection partly hold its own. The inflectional conjugation of verbs is reduced to a mere shadow of its ancient complexity. There is an absolute freedom from the intricate and utterly useless gender distinctions which yet encumber the Continental languages of Europe, and which are survivals from that age of human culture when all things were supposed to have life and numerous sexless objects were designated as masculine or feminine. The former use of a dual number was also a survival from an age of mental infancy.

It may be of interest briefly to retrace the path we have followed, and observe how clearly all the stages of development may still be seen in the limpid depths of modern speech. Nothing has been lost. The use of interjectional cries, of sounds native to the vocal organs, of imitative words, of duplication of sounds, all the primitive speech methods, indeed, are paralleled in the prattle of children and to some extent in modern language. The various steps of evolution have left their marks. New words are still coined. The meanings of old words are extended. Word combination is active, for all the purposes for which it was used of old. Word degradation is as active. Stage by stage the analytic has replaced the synthetic method, and both are still at work upon modern speech. Syntax has largely replaced grammar, particularly in English speech, in which something of the simplicity of the Chinese method has been added to the advantages of the inflectional. Language has thus passed through a broad cycle of development to approach one of its starting-points, though at a much higher level. As to the future evolution of human speech little can be said. Its existing high literary cultivation must check all rapid or radical change. The chance variations of the past are likely to have no parallel in the future. New words will be added only as actually needed, while variation is likely to be confined to changes which will conduce to greater precision, expressiveness, and harmony of language. We are past the age of dialectical drift, and every new form in the future will be carefully weighed and measured before it can pass current in human speech.

It is necessary now to consider the second general mode of thought expression—that of written language. This, as we have good reason to believe, began everywhere as a pictured representation of the object of thought, a drawing intended to convey information to others. The North American Indians thus managed to convey considerable information, by the aid of rude bark-drawings. There is no effort in these to elaborate a picture. It is language, not art, that is intended, and for this the simplest outlines suffice. In some cases conventional forms, with no resemblance to objects, have come into use. In these drawings we possess an early stage in the evolution of written language, the survival of a process which in time led to the hieroglyphic method of writing.

From the rude picture language of savages to the ideographic written language of the early civilizations there is a long step. The gap, however, is partly filled by the picture writing of the Aztecs, in which we possess an early stage of hieroglyphic development. In the Aztec manuscripts the pictures are abridged, no effort being made at an exact delineation; but their origin is evident, and the language would still be simply a pictured or figurative one but that the sense has often gone far beyond the signs. Many of these signs have become symbolic, a serpent, for instance, representing the word "time." This symbolism, a result of the recognition of the relations and analogies of things and thoughts, has had a great influence upon the development of both spoken and written language. It can be perceived even in the rude drawings of the Indians, and becomes highly developed in the more perfected hieroglyphic system.

But written language attained its most important stage of advance when signs were employed to represent sounds, without reference to their special meaning.

This was the first decided step towards the affiliation of spoken and written language, and also towards that phonetic analysis which is so highly essential a phase in the development of human speech. It was attained, in its first imperfect condition, by the Aztecs. They were acquainted with the use alike of representative, symbolic, and phonetic signs, but employed the first of these almost alone. And their verbal signs had become but partly conventionalized in form. A Mexican text looks like a collection of separate pictures, while an Egyptian manuscript looks almost like alphabetic writing.

The Egyptian, indeed, yields us the highest unfoldment of the purely hieroglyphic method. This early civilization has retained no direct traces of its remote evolution from savagery, but possesses many indirect ones. A page of its writing is full of evidence of its derivation from a primitive pictured stage, though in the earliest extant manuscripts it had advanced far beyond this stage. It is yet sufficiently clear in most cases what objects are represented by the signs, despite their outlined and conventionalized forms, but it is not usually so clear what meanings are conveyed. The signs represent ideas rather than objects, and symbolization has been carried so far that it is often difficult to discover the connection between the object pictured and the idea signified. Many of these ideas, indeed, are those of the purely mental processes, of which no direct pictured representation would be possible. Thus metaphor, or the use of analogy, so widely employed in ancient speech, had a very important influence on the development of written language.

The written language of Babylonia yields another interesting example of the development of the hieroglyphic process. The Accadians, the original civilizers of Babylonia, undoubtedly used picture writing, and apparently employed for this purpose the papyrus which grew in the marshes of the Euphrates. When at a later period clay tablets were used, a modification of form became necessary. Curved lines disappeared, and cuneiform, or wedge-shaped characters were adopted. In the oldest writing we can see this gradual change from pictures to arbitrary forms, and the simplification of written forms continued throughout Babylonian history. The Assyrians used a clear and well-defined script, which remained unchanged during all their history.

Man must have very early perceived that spoken sounds had necessarily no meaning in themselves, that new meanings could be given to them at will, and that they could be mentally divested of any meaning, and reduced to their primitive condition of mere sounds or noises. In time the idea arose that sounds in themselves, without reference to their sense, could be represented in writing. This was done in various regions, although the analysis of sounds was at first very far from being complete, and in several cases never attained completion. The first step of progress from the picture was to consider the ideograph as the representative of a complete vocal utterance, the sign for a single word. The Chinese is largely confined to this stage, the common use of determinative signs having here hindered any further progress. A second step was the representation of part of a compound word, the syllable gaining its written sign. This is the force of many Egyptian phonetic symbols, while the Babylonian and Assyrian writing ceased its development at this syllabic stage. Of these languages the Egyptian alone took the final step of analysis, and isolated the primary or alphabetic sounds of vocal utterance, which it indicated by written signs.

Of syllabic signs, representing combinations of sounds used in different words, more than 300 were employed in Egyptian writing. Of alphabetic sounds all the important consonant and vowel tones were represented, and most of them by many different symbols. The use of these signs arose, according to Champollion, by giving to the sign for each object a phonetic value representing the initial sound in its name. Thus the sign *ro,* "mouth," would also stand for the sound of *r,* which might, however, in the same manner, have become represented by several other signs. Whether this theory is correct or not, it is certain that alphabetic analysis made considerable progress, though the Egyptians failed to discover the simplest and most natural method of combining these signs. An Egyptian written sentence was often a confusing mixture of letters, syllables, and ideographs, while determinatives were largely employed to specify the meaning of phonetic signs. In the demotic and hieratic systems of writing the Egyptian system lost every visible trace of its hieroglyphic origin, and gained the greatest rapidity possible in such an involved method. But though it approached so near the device of alphabetic writing, it came no nearer. The very perfection to which it had brought its complex system acted as a final check to further progress in what seems to us the natural direction.

Who made the final step, and conceived the idea of forming written words by a combination of alphabetic signs, as they are similarly formed in speech by a combination of alphabetic sounds, cannot positively be determined, though the honor seems to belong to the Phœnicians. Whoever did so first completely allied spoken to written language, and brought the two streams of mental expression into one channel.

All we positively know concerning the origin of the alphabet is the common tradition, which is very probably founded on fact, that the Greeks borrowed their alphabet from the Phœnicians. No one imagines that the Phœnicians themselves devised this alphabet. In all probability they borrowed it from some of their civilized neighbors, it is not sure from which, though the preponderance of evidence is in favor of an Egyptian source.

This origination of alphabetic writing by the Phœnicians may have taken place in a way of which there are several interesting instances in the history of mankind. A developing nation borrows ideas and methods from a more advanced nation, and, probably through a misapprehension of their former mode of use, gives them a new and superior form. In regard to language we have one significant instance of this in the Japanese use of the Chinese symbols. The people of Japan, on reaching the stage of civilization which rendered a written language desirable, did not take the trouble to invent one for themselves, but borrowed one ready made from China. But in so doing they obtained the characters with their phonetic meaning only, and divested of their ideographic sense. These, which represented words in China, were employed to represent syllables in Japan, and such has continued the form of the written language of Japan until the present day. This syllabary of the Japanese contains forty-seven characters, from whose combination all the words of the language are made up.

Something similar probably took place in Phœnicia. But instead of taking the syllabic, this people took the alphabetic signs of the Egyptians, divested of all their associations. The borrowers may have utterly failed to comprehend the complex written system of Egypt, and have attempted to invent a system of writing of their own, by the aid of these alphabetic signs. This, of course, is hypothetical, yet it indicates a method in which the simple combination of letters to form words may have originated. The Egyptians, satisfied with their old system of writing, did not recognize the treasure it concealed, or were averse to any variation from their accustomed method. To the Phœnicians the alphabetic signs were alone of value, and they chose them out of the varied Egyptian characters. However this be, at all events we find in Phœnicia the completion of the evolution of written language, in the use of an alphabet of signs for elementary vocal sounds.

We cannot further review the development of the alphabet. In fact, like the numeral signs, it attained perfection of principle at its origin, and its main modifications have been in the simplification of its forms. The development of written and spoken language presents interesting analogies. Speech began with sentence-words, then descended to words signifying parts of a sentence, and became gradually analyzed and broken up till its words, in the most advanced languages, became the ultimate units of the sentence. Written language, in like manner, at first represented a whole thought, then part of a thought, next the grammatical units of thought, and by a further process of analysis broke these up into their component sounds, and yielded their alphabetic units. It thus went further than spoken language, which dealt with words only, and analyzed speech into its ultimate elements of sound.

Since ancient days this analysis of sounds has greatly progressed. Man's vocal organs have grown more flexible and delicate, and the possibilities of varied utterance have much increased. From a primitive stage of great poverty, vocal expression has grown rich and varied, while the alphabetic sounds of language have slowly become more numerous. Whitney tells us that the sound of *a* in *far* forms fully thirty per cent. of Sanscrit utterance, and that at an earlier period *a* and the mutes probably served for three-fourths of all speech. In modern English *a* is but the half of one per cent. of our utterance, and the other consonant sounds have become as common as the mutes. But the necessity for an invention of new alphabetic signs was largely obviated by an extension of existing signs to cover more than one sound, hence the alphabet has grown less rapidly than the sounds of language.

As sounds have grown in number, so have words, and by a variety of processes. At first, probably, word-invention was the prevailing process, though it was conjoined with an extension of verbal significance. Word-making is common with savages. It is rare with civilized peoples. The coinage of new words gradually declined, and the modification of old words came more and more into vogue, as civilization advanced. For many centuries language-making has been little more than a working over of the old material, sense extension and word transformation having been during all historic times the prevailing methods in the growth of language.

The extension of the meaning of words was largely due to two influences: erroneous conception, and analogy. The former of these influences came early into play, as a consequence of the mistaken perceptions of early man. Very incorrect notions were entertained of the nature of things, and objects were classed together, and frequently known by one general name, where no real resemblance existed. When, later, these objects fell into their true classes, they often retained their common name, though the reason for this designation of diverse objects by the same word had disappeared. The process was rendered easy by a fact which we must recognize in all considerations of human speech, namely, that nearly all words in use are class names. It would be impossible and needless to give every object a special name, and such names are largely confined to the designation of individual men and women, while as a general rule each word signifies a class of objects. Any error in classifying objects, therefore, is calculated to cause an erroneous extension of the meanings of words.

A second, and far more prolific method of sense extension has resulted from the activity of the imagination, and the recognition of countless analogies in nature, many of them indicating real resemblances, many others being purely fanciful. In the far past this process was particularly active. It was notably aided by the errors of old conception, of which we have spoken in preceding pages. Through the free use of metaphor the significance of words became greatly extended. A cloud was *born*, *grew*, and *died*. It was *fleecy* in *texture*, or *angry* and *threatening* of *aspect*. It *floated*, or *swam*, or *spread its wings* in *flight*. The moon *lay* on its *breast*. The sun *hid* in its *sheltering folds*, or *looked* with *keen eye* through the *windows* of the storm. Such a use of metaphor opens out an illimitable possibility of the extension of language. The resemblances and analogies between the objects and conditions of nature are numberless, and permit an extraordinary extension of the meanings of words, through the process of imaginative or fanciful classifications. By this method, in past times, arose the language of mythology, with its great variety of conceptions. Poets and imaginative thinkers ever since have been adding new meanings to old words by this process, many of which remain distant reflections of thought, while many others have entered into the intimate web of speech, and are now accepted as ordinary significations, their figurative origin being partly or wholly lost.

As perception and imagination have thus borne their parts in language-making, so has the reasoning faculty. It has been busy in detecting the resemblances of objects—their real instead of their analogical relations—and classifying them accordingly. In this way the meanings of words have been considerably extended, and a new language has sprung up, that of science.

In science, indeed, there has been a very great coining of new words. The application of old terms served for the vague purposes of metaphor, but would have been useless for the exact purposes of science. Hence every new species of objects discovered by science has been designated by a new word, usually formed from a combination of parts of other words, mainly of Greek or Latin origin, but in some cases by an actual invention. And very many new words have come into use to give the necessary precision to scientific speech.

There is, however, another great extension of the scope of language, now to be noted. It must be borne in mind that man lives in two distinct worlds, the physical and the mental. These touch at every point, the mental being in great degree an analogical counterpart of the physical. But in the early days of language-making the existence of this mental world was scarcely recognized. Language grew, in great part, as a designation of the physical world, the mental not becoming prominent in thought until a much later date. Since its full recognition its importance has been steadily growing, until now it has equal value in language with its physical counterpart. The conditions of this mental universe needed to be named. But in doing so few new words were invented. The close analogy between the conditions of the mind and those of outer nature was evident, and a general extension of the meaning of words took place, the terms applied to physical processes being secondarily applied to the characteristics of the mind. Thus as man discovered the new world within himself, he closely allied it with the old world outside himself by a community of names. Since that period numerous modifications of mental language have taken place. Words have been changed to specify their mental application. In many cases they have lost their physical application, and are used in a mental sense alone. Yet the connection continues sufficiently close to indicate the source of mental language, and to point out the analogies which everywhere exist between the kingdom of outer nature and that of the mind.

We have spoken here of the several forces at work in language-making as if they came successively into play. This is hardly correct. More probably every principle now at work has been at work from the beginning, although the importance of each has varied at different periods. The needs of a more complete expression of thought tended to produce word combination, either direct or syntactical, from the first. The desire of ease and rapidity of utterance, or vocal laziness, as many philologists term it, has tended to word degradation from the first. During a very long period, however, necessity gave the supremacy to the first process. Only after sufficient fulness of grammatical expression was attained did the degrading process gain the ascendency, and everything that could be spared without loss to the meaning of the word begin to be lopped off. This process, however, was mainly confined to the Aryan tongues, whose words were particularly susceptible of analysis. On reaching their completeness of inflectional composition they began to break asunder and wear down, and have ever since tended to strip themselves of everything that could be spared without loss to their expressiveness. In this way many of the ancient polysyllables have become monosyllables, some by dividing into their elements, others by the wear and tear of usage, and a very great degree of simplification of verbal forms has taken place. But many of the words of modern speech still cling to all their old relations and shades of meaning, and touch the realms of nature and the mind at a thousand points. In this sense language has become like a fine web, of which words are the threads, some of them soon dying out, others reappearing from end to end of the intricate fabric.

In this modification of language the changes have been largely superficial, grammatical changes being of rare occurrence. Words have varied with the greatest readiness, while the deep-seated structure of language has been vigorously persistent. Man is rigidly conservative in the preservation of old conditions, and frequently the complete disruption of a nation by war has been necessary ere its deeper-lying habits of thought and action could be changed. Linguistic variation has been most rapid during periods of mental gloom, and changes in the grammatical structure of language have been mainly due to the forced minglings of peoples, and the necessity of a simplified method of communication. The "Lingua Franca," "Pigeon English," and "Chinook" jargons of modern days are examples of simplification which may have been many times paralleled in the history of the past, and it is very probable that to similar efforts at easy verbal intercourse between the German conquerors of the Roman empire and their Latin-speaking subjects we owe the breaking down of the old inflectional complexity and the adoption of simpler methods of speech.

There is a natural check to language variation which always comes prominently into play as civilization advances. This is the development of an active literature, the use of lexicons, and the authority of adopted standards of speech. A literary class is apt to make a deity of its literary treasures, and worship the words used by classical writers. A popular work is a strong brake on the wheels of dialectical change, and a standard dictionary an almost impassible barrier to speech variation.

The dead languages, the Sanscrit, Latin, Greek, etc., long exerted such an influence, but only on a learned class. They had no effect on the people at large. Modern linguistic standards act on nearly the whole people, and the possibility of new languages arising in any of the old methods among civilized peoples is practically at an end. Yet the fixation of modern languages is not complete. Dialectical variations are occasionally accepted. New words come into use. Even some modification of grammatical forms takes place. But in this modern change there is none of the chance variation of the past. Every coin dropped from the mint of language to-day is thoroughly weighed and tested before it is accepted as sterling. Nothing is adopted that is not of acknowledged value, and future linguistic change cannot well fail to be in the line of true progress, a gradual movement towards the utmost possible flexibility and expressiveness of human speech.

CHAPTER XIX.

THE EVOLUTION OF ANCIENT LITERATURE.

CIVILIZATION is, to a very great extent, the offspring of literature. During thousands, no one can safely say how many thousands, of years the thoughts of man were given to the winds, and blown idly away. Throughout this period he remained a savage. For a few thousands of years man has been sowing his thoughts, like vital seeds, in the minds of his fellows. These seeds have taken root and borne fruit abundantly. To their fruit we give the name of civilization. A recorded thought is, indeed, a plant of marvelous vitality. Like the famous banyan tree of India it sends down a thousand fresh roots. It gains nutriment from the most diversified mental soils, and may expand into a forest of the utmost luxuriance and fruitfulness.

But that this effect may be produced, some means of thought preservation must be employed. The growth of written language, the recording agent of thought, was briefly reviewed in the previous chapter. When once this agency was attained, and some suitable material for the extensive multiplication of written thought was devised, the human mind had fairly broken the trammels which had so long restrained it, and the growth of enlightenment became a question of centuries, instead of millenial periods. But even before the discovery of writing strenuous efforts for the preservation of the products of thought had been made, and a considerable body of literature was extant.

The earliest written records were necessarily very brief. As a rule they were engraved on stone, at a considerable expense in labor. In this way such events as seemed of the most vital importance to the nations concerned were recorded. Unfortunately the ideas of historical value then entertained differed from ours, and these rock records play but a secondary part in the history of literature. Only in Egypt, in which country stone sculpture was a common art, did the literature of the temple wall and obelisk gain any considerable development, and become a valuable addition to the stores of human thought. But in every civilized land some simpler method of recording thought came early into use. These were of various degrees of efficiency, and the diversity and value of the records bore a close relation to the suitability of the writing material employed and the degree of unfoldment of the art of written language.

Least developed of all civilized peoples in this direction were the inhabitants of Peru. They had no need of writing material, since they had devised no system of writing, not even the rude pictured method of many savage tribes. Their only records were kept by the singular device of the *quipu,* the least efficient of all known systems of thought preservation. The *quipu* was a cord, composed of different colored threads twisted together. To it were attached at intervals smaller threads, also of different colors. These threads were tied into knots. This was all; yet it is remarkable how much they succeeded in expressing by this simple instrument. The colors denoted objects, *white* for instance, indicating *silver,* and *yellow, gold. White* also might mean *peace,* and *red, war.* But the main use of the *quipu* was for statistical purposes. The knots served for numbers, and the arithmetical records of the empire, such as the number of inhabitants and of the various classes of the population, the register of births, deaths, and marriages, the quantity of the public stores, and many other such statistics, were all indicated by the knotted threads so carefully prepared and preserved.

Yet such an instrument was utterly incapable of serving the purpose of a literary medium, and in every other civilized nation we find that some system of writing was devised, and fabrics suitable for its employment were in use. Originally, as we have said, important events were occasionally recorded upon stone. The most remarkable instance of this is the Persian engraving at Behistun, where the perpendicular face of a mountain, 1700 feet high, has been used as a gigantic tablet, on which to record the deeds of King Darius. But for less important events more perishable material came early into use, and records were made, even by barbarous tribes, on the bark of trees, on skins, and the like materials.

Similar materials were used by nations of considerable advancement, and gradually led to the use of better adapted substances. Thus the hieroglyphic paintings of Mexico were executed partly on skins, and partly on the leaves of the maguey, or agave plant. Cotton fabrics were also employed. In China the early manuscripts were written on similar material, the inner bark of the bamboo being used as paper in the time of Confucius. There is reason to believe that at a remote period the Chinese employed a device similar to the Peruvian *quipu*. In Egypt the papyrus plant came into early use as a writing material. An excellent paper was made from it, which was abundantly employed, and became a staple article of export to the Grecian and Roman states. A different and peculiar medium of literature was employed in Babylonia and Assyria. Bricks and cylinders of clay there served as writing material, the letters being stamped on the clay while in a plastic state, and preserved by drying or burning this substance. Great libraries were formed of these closely written clay books, many of which are yet fortunately in existence. The last of the primitive forms of writing material of which we need speak is parchment. The skins of beasts had been early used for this purpose, but came into important literary use only about 200 B. C. At that period the exportation of Egyptian papyrus had been prohibited, and the inhabitants of Pergamus began to manufacture parchment as a substitute, using in its preparation the skins of sheep and goats, which were made thin and soft by suitable means. An extensive library, rivaling that at Alexandria, was written on this material and preserved at Pergamus.

Paper, as we understand it, was invented in China. The use of bamboo tablets, of which we have spoken, was succeeded, about 200 B. C., by the employment of closely-woven silk; and the brush pencil, which is still used in China for writing, was invented at the same period. Not much later this silken material was superseded by the invention of a true paper, made of "the inner bark of trees, ends of hemp, old rags and fishing nets." Paper, as used in Europe, was probably borrowed from the Chinese, who had, early in the Christian era, become very skilful in its manufacture. In the seventh century it was introduced into Spain by the Arabians, who had very likely learned the art of its manufacture from the Chinese, though of this we are not certain. Paper mills are said to have been in operation in Toledo in 1085. The art was introduced into France and Germany about 1314.

The honor of the still more important invention of printing also belongs to China, in which country it was employed at the end of the sixth century, 900 years before its invention in Europe. It progressed but slowly, however, and it was not until the eleventh century that the original system of engraving a whole text on a single block was superseded by the use of movable types, whose discovery is accredited to a blacksmith, named Pe Ching. This important invention has been but little improved in China, and block printing is still largely employed. It is not positively known when block printing first came into use in Europe, nor do we know whether it was re-invented or borrowed from China. The first clear traces of its use date about the year 1400. It seems to have been first employed in the printing of playing cards, then for figures of saints, with a few words attached, and gradually for entire pages of print. Some block-printed books still exist, of a few pages each. Movable types were invented about 1450, probably by John Guttenberg. This highly important art was not suffered to lie dormant, as in

China, but was actively employed and improved with great rapidity. To its present high state of development we owe the extraordinary profusion and cheapness of modern books, which have given such immense vitality to the civilization of Europe and America, and have made every valuable thought of man the property of the world.

But the literary period began long before the invention of written language or the use of writing materials. Previous to this era much in the history or in the imaginary conceptions of man had seemed worthy of preservation, and had been retained in the memories of successive generations. In this manner a literature of considerable extent and diversity came into existence, and much of our store of ancient thought was handed down for ages in the human memory before it gained embodiment in written language. Indeed, a considerable sum of the past thought of the world was retained in this manner for centuries after the invention of writing, and the memory of man still contains much of what is known as folk-lore, which is being slowly added to our wealth of written literature.

The most notable instances of memorized preservation of thought are those ascribed, perhaps on insufficient grounds, to the works of the early Greek and Sanscrit authors. It is not improbable that the art of writing was known to the Greeks of the days of Homer, but the balance of evidence is in favor of the belief that the Iliad and Odyssey, with much of the contemporary literature, were preserved by memory for at least several generations. In regard to Hindu literature, Max Müller believes that the Vedas, with their vast explanatory literature, were preserved, possibly for a thousand years, by the memory alone. This is difficult to credit, when we remember the extent of this literature, and Whitney considers it very doubtful. Yet it must be acknowledged that the powers of the human memory are very great, and it is not easy to place a limit to its possibilities of achievement, in persons who devote their lives to study and memorizing.

In regard to the characteristics of the thought which has been so sedulously preserved, by every condition of man above the very lowest, it may conveniently be divided into three classes, corresponding to the three general divisions of the intellect described in the preceding chapter. Literature, like the mind itself, thus occupies three fields; the perceptive, the imaginative, and the reasoning. The earliest extant literature, however, nearly all belongs to the imaginative class. The purely perceptive period, which may have been of long duration, was the era of primitive savagery, during which little or no effort was made for the preservation of thought. The conceptions of early man did not take form in literature, but in the arts of common life, which have been left to us as the legacy of the remote past.

It was only after the imagination became active, and numerous figments of pure fancy, incapable of embodiment, arose in the minds of men, that literature can be said to have originated, the human memory becoming the tablet on which thought engraved its earliest imaginative products. We have already spoken of the very great influence which these crude imaginings had upon the minds of savage and barbarous mankind. Plodding on in the dull round of ordinary duties, there was thrown open to them by the imagination the gateway to a broad kingdom of fairy-land, in whose splendor they might revel at their will. The deeds of daily life became dull and valueless when contrasted with these entrancing figments of fancy, which were eagerly listened to, intensely impressed upon the mind, and handed down from generation to generation with an exactness which history has vainly sought to emulate.

From the period in question no trace of the history of man comes down to us. We receive instead the annals of a kingdom of enchantment, within which every outreaching thought of man was embraced. Every conception passed through the lens of fancy, or became transformed in the fervor of the imagination. The deeds of earthly leaders were magnified into the deeds of supernatural beings. The movements of the heavenly bodies and of the forces of nature became the marvelous actions of a hierarchy of deities. The simplest movements of nature had in them something of the magical. The mind of man became full of folk-lore and fairy lore, much of which is still extant. Fable and fiction everywhere superseded fact. The rules of ethics were attached as morals to fictitious stories. The religious duties of man formed the staple of tales of the supernatural. Philosophy was overladen with imaginative extravagances. The theory of the constitution and government of the universe became a mythology not less extravagant than the wild fictions of the Arabian Tales. All thought was sublimed in the crucible of the imagination, and man performed the daily duties of life in the midst of a realm of enchantment, which filled his mind and illuminated the whole humdrum kingdom of hard fact which visibly surrounded him.

Such was the character of the earliest records of thought, the literature of the memory, which was handed down from mind to mind for ages before man learned the art of physically preserving his ideas. It was constantly added to. The crude conceptions in which it began grew into the richly imaginative stories of a later period. Poetry emerged from this warmth of the imagination. The language of simile and metaphor became almost the language of common life. The mind grew acute in the discernment of the analogies of nature, and the wisdom of the ages became condensed into those proverbial apothegms of which every nation has preserved a plentiful store, and in which the lessons of homely wisdom are conveyed in metaphorical phrases which form the rich sediment of centuries of vanished poetry.

Everywhere in the history of literature poetry emerges as one of the earliest forms of recorded thought. It was the natural fruit of the imaginative conceptions which so long were dominant in the mind of man. As in one direction these became condensed into proverbial sayings and ethical dogmas, the sublimated wisdom of the ages, so in another they took on the charms of rhetoric and versification, became wedded to music, lost much of their wild extravagance, and softened into the rich and fervid strains of the ancient muse.

The birth of poetry marks an important era in the development of the human mind. The imagination became gradually sobered and artistic in its productions. Its pristine extravagances grew distasteful, and an age of more subdued idealism succeeded, in which harmony of tone and thought and a rational relation of conceptions were demanded and appreciated. And with the progress of poetry the life of man became the subject of literature to a far greater extent than in the preceding period. The deeds of the hero, the virtues of the saint, the nobility of the great, the humble merits of the lowly, the daily vocations of man, his wars, his pageants, his doings and sayings, were sung in stirring strains, in which the supernatural still mingled to a considerable degree, yet in which we can see that man was growing to esteem himself as worthy to be named even beside the mighty gods. History began to underlie fancy in the verses of the poets, and the events of human life were at length deemed worthy of literary embodiment.

In all nations, with few exceptions, such a poetic era preceded the emergence of the soberer forms of literature. There is, however, one notable exception, to which a particular reference is due. This is the nation of the Chinese, of which strange people a deficiency of imagination has always been one of the most striking characteristics. In China common sense has become deified, while the higher forms of mental evolution have gained but little expression. The causes of this circumstance may be briefly considered. The early literature of every people is significant of its first intellectual movement, or of the original influences which impressed the minds of its thinkers. It is a striking fact that this primitive thought record is almost exclusively religious, the mind of man having seemingly been kept busy in speculation, conciliation, and worship. The imagination had here a fertile field of exercise, and in one direction originated a marvelous series of cosmogonies and mythologies, in the other softened its conceptions of the supernatural into the more homely forms of folk and fairy lore.

Undoubtedly in early China there was a movement of the mind in the direction here indicated, as there has been, indeed, throughout all Chinese history. But certain influences prevented this movement from attaining the freedom which it gained elsewhere. One of the most important of these was the character of the religious idea of the Chinese. In the national Chinese faith there is only the one great deity, with whom the people have nothing to do, the emperor alone being privileged to address him. The host of lesser deities worshipped in other creeds is replaced in China by a host of lesser human powers. The religion is an ancestor worship, and though mythology has had some minor development its deities have had but little influence upon the Chinese mind.

Very important results have arisen from this circumstance. In the first place the religious incentive to imaginative speculation, so active elsewhere, has been lacking in China. In the second place the belief in the dignity of man, repressed elsewhere by the seeming supremacy of supernatural agencies, gained an early unfoldment in China. The emperor was God's vicegerent. The ancestors of each family were the deities of that family. Man was the one great power in the universe, and the divine powers were but dimly and vaguely present to the Chinese mind. These causes had much to do with checking the unfoldment of the Chinese imagination. Man's duties were to man, not to God. Moral apothegms replaced religious creeds, and the duties of man to his fellows took the place of the duties of man elsewhere to his gods. This repression of the imagination has had a vigorous effect upon the Chinese literature, which is almost completely secular, while the Chinese mind is remarkably practical. It has been with man and his social and political relations that the Chinese authors have mainly had to do, and their work is very largely on the perceptive plane of thought, the imagination and the reason entering into it but as secondary elements.

The ancient literature of China is mainly a record of man's doings and relations. It emerged into history while that of other races was floundering in mythology. It is to Confucius that we owe the preservation of the more primitive products of the Chinese mind. These are not destitute of cosmological speculation, but their principal subjects are history and ethics. One of the works preserved by Confucius, however, is the *Book of Odes,* a valuable collection of ancient lyric poems, which show that a considerable degree of imaginative fervor existed at an early period. The epic power was never developed in China. It required a more vivid exercise of the imagination than seemed possible to the Chinese mind.

At a later period a great activity in the production of the literature of perception was manifested. Numerous and valuable works on history, geography, the statistics of China, its public works, its political conditions, and other practical subjects appeared, the whole constituting a voluminous literature. Among these works is a nearly complete record of the annals of China from the third century B. C., to the middle of the seventeenth century A. D., comprised in sixty-six folio volumes. There is in addition a great geographical and statistical work embracing three hundred and fifty-six books, and several voluminous historical and literary encyclopedias of great value. The most extensive of the encyclopediac works is one which was ordered by the emperor Kang-he, who reigned about two centuries ago. He appointed a commission to collect and reprint all such works as might be deemed worthy of preservation. This work, entitled *A Complete Collection of Ancient and Modern Books*, consists of six thousand one hundred and nine volumes, and forms a highly valuable compendium of Chinese literature, in all its branches.

Such is the characteristic of the great mass of Chinese literature, almost wholly a record of perceptive thought, the imaginative and reasoning powers having comparatively little to do with it. Lyric poetry has continued to be written, and there is a considerable mass of dramatic and novelistic literature. But the latter consists of crude narrative, with no delineation of character and no just representation of nature. Exaggerated sentiment replaces the finer details of imaginative conception, and the principal merit of these works lies in the novelty of many of their incidents and situations.

We have given some of the causes of the restricted development of Chinese thought. These influences, however, would probably have lost their power long ago, and imaginative work of much higher tone, with philosophical and scientific productions far in advance of those now existing, might have been produced, but for the operation of another and still more potent restrictive agency. This is the exaggerated estimate of the value of the ancient literature of the empire, and the almost complete confinement of literary study to the works of Confucius and the other classic authors. The most important feature of the Chinese political system adds tenfold to the force of this influence. All political preferment in that ancient empire rests upon literary proficiency. Every student keeps such a material reward closely in view, and studies mainly with the hope of becoming a salaried mandarin. But the examinations are based solely on proficiency in the *Nine Classics,* and these are the only text-books which are put into the hands of students. The classics are the models of excellence, and to deviate from their doctrines and opinions would be deemed heretical. Thus the ability to memorize the literature of the far past is the highest accomplishment of the learned Chinaman, original thought is sedulously discouraged, and the tomes of Confucian literature have been chewed over and over by centuries of scholars until no nutriment is left in their dry husks. We can readily understand, then, why the Chinese mind has deteriorated instead of advancing. The mental conditions extant twenty-five centuries ago are sedulously preserved, the intellect of China buries itself in the grave of ancient thought, and intellectual conservatism exists to an extent unparalleled elsewhere in the history of mankind.

The character of the Chinese intellect, here described, is strikingly unlike that of the Aryan race, in which we meet with an imaginative activity unequalled in any other family of mankind. The causes of this early development of the Aryan imagination are unknown. Quite probably the conditions of nature to which the primitive Aryans were exposed, and their life habits before their dispersion, had much to do with it. But of these we know little, though we can safely say that their intellectual development was not restrained by a paternal system of government and religion, like that which had such a restrictive influence upon the Chinese mind. Possibly also their wanderings under new skies and through new climes, their wars for new homes, and the political and mental freedom enjoyed by every householder, may have done much to intensify the imaginative fervor which had previously arisen. Whatever the cause, they come into history as the most vividly imaginative race of mankind.

The unfoldment of religious ideas resulted with the Aryans in the prehistoric growth of a highly involved mythology. In this direction, however, they were paralleled by other peoples, notably by the Egyptians and Babylonians; and in a minor degree by the Atzecs and Peruvians. But in the subsequent development of imaginative fervor the Aryans stand pre-eminent. At present, however, we are concerned only with their eastern branch, the Indian and Persian, which section of the race first emerged into literary activity.

The literature of the Hindu Aryans is one of the most striking outcomes of the ancient mental history of mankind. As compared with the Chinese, the Hindus stood at the opposite pole of intellectual development. The one people has made the facts of nature and history its field of study, and is almost devoid of speculation, perceiving the mind only in its practical moral relations to other minds, and possessing but vague conceptions of the supernatural. The other people has made the conditions and the moral and spiritual relations of the mind its field of study, seeing facts only in a distorting mirror, and reveling in the utmost depths of speculation, dwelling, as it were, in a universe of the supernatural.

The early supremacy of thought over action among the Hindus is seen in the fact that in this people alone among the nations of mankind the leaders of thought became the rulers of the people. Government was dwarfed by religion. Force yielded to thought. Imperial development was prevented by the vigor of mental activity and the supreme control of religious dogma over the popular mind. Thus of all the great civilizations of the past that of India was the only one that failed to condense into a single powerful kingdom, but remained a congeries of minor states destitute of vigorous political energy. The science of government was checked in its development by the superior activity of the science of religion, and India lay the helpless prey of foreign conquerors, to whom it was incapable of offering any combined resistance.

This supremacy of the sacerdotal class had an important influence upon the literature of the people. In the early days of every people the thinking class naturally gravitates to the theological profession and primitive thought is mainly religious in character. In China, as we have seen, this tendency was checked by the supremacy of the government and the absence of supernatural religion, and history took the place of speculation. In India the opposite conditions ruled. Speculation replaced history. This, indeed, was the case to an extent unparalleled elsewhere. India is the one great nation which has made no effort to preserve its annals. But it has preserved its speculative thought to an extent nowhere else equalled. The result has been the production of an enormous mass of literature which is almost destitute of political value, but is a remarkable contribution to the history of thought; and a restriction of external development which has kept India in a state as conservative as that of China.

There are certain requisites to the development of literature which strongly influence its production and character. Wealth and leisure, in developing nations, are confined to two classes: the military, including the governmental, and the priestly; and learning is usually restricted, in the earlier era, to the latter of these. The literary class being thus sacerdotal in profession, thought strongly tends to confine itself to religious subjects, though its development is powerfully influenced by the character of its audience. This may consist of one of three classes: the people, the governing authorities, and the priests themselves. The first of these classes, in the early days of literature, demanded the supernatural, and that in its most extravagant and least logical form. The interests and tastes of the second tended towards secular subjects. The third sought for a philosophical unfoldment of religious thought, and the weaving of the dogmas of faith into a coherent and reasonable system of belief.

In early India the last named influence became supreme. The governmental authorities failed to grow powerful or important. The people were satisfied with fanciful myths, of their own devising. The priesthood formed at once the makers and the audience of literature, which in consequence took the direction of religious philosophy.

The gradual steps of unfoldment of this philosophy are full of interest. First was evolved the incoherent mythology of all primitive Aryan peoples, in which the facts of astronomy and meteorology were woven into a maze of confused and extravagant supernatural stories. Then came an age of praise and worship, in which literature first took coherent form, in the shape of religious lyrics, simple, devout, and often elevated in tone. These songs, frequently highly imaginative and poetical, were composed and sung by the priestly bards of the Hindu tribes, in their conquering march southward to India. They form the *Sanhita*, or lyrical section of the *Rig-Veda*, the foundation of an enormous mass of subsequent literature.

The second section of the Vedas—which title includes several works in imitation of the Rig—formed the *Brahmanas*, ritualistic or ceremonial prose works, in which the earlier lyrics, already become sacred, were used as rites, incantations, and dogmas of worship. The third section embraced the *Sutras*, a condensed ceremonial. By the time this literature of ceremony was completed the religious organization of the Brahmans had greatly developed; and the inspired singers of the earlier period had been succeeded by a priestly caste, with a highly complicated system of worship and sacrifice, through which they greatly increased their control of the popular mind.

With this formation of ritualistic texts was associated the production of critical commentaries on the Vedas, and speculative ideas, from which in time the involved religious philosophy of India emerged. This philosophical system appears in the *Upanishads,* which compose portions of the *Brahmanas,* and occasionally isolated works; and in the *Puranas,* which consist of cosmogonic conceptions, the history of creation and of the gods and heroes, the doctrine of the successive destruction and renovation of the world, etc. The *Puranas* in their original form are, however, lost. Those in existence are modern productions. As to the character of the intricate philosophical system thus gradually evolved, by generations of deep thinkers extending down to the founders of the Buddhistic faith, nothing here need be said. It has already been reviewed in the chapters on religious development.

The literature produced during this earliest, or Vedic, literary age was enormous in quantity, and much of it is still in existence. There followed a second literary period which has been distinguished by some writers as the Sanscrit, in which man's relation to the gods ceased to be the sole worthy object of human thought, and man's relation to man grew gradually into prominence.

One of the early works of this period is the *Institutes of Manu,* the code of sacerdotal law, in which the lines of caste distinction are first defined. In this ancient code man's misdeeds continue to be viewed mainly as sins against the gods, and any infringement of the lines of caste distinction are punished as sacrilege rather than as crime. Only in later codes does criminal action gradually lose this sacrilegious character, and the secular relations of man infringe upon the theological.

In this second period science emerged, but it was a science that naturally flowed from religious worship. Its most developed field was that of grammatical analysis. Such an attention to grammar necessarily arose from the close study of the text of the Vedas, in which the sense of every word was critically weighed in the acute minds of deep-revolving students. This persistent verbal study gave rise to a clear perception of the grammatical principles of language, and yielded, at the era in question, the remarkable grammatical work of Panini, which Max Müller entitles "the perfection of an empirical analysis of language, unsurpassed, nay, even unapproached, by anything in the grammatical literature of other nations."

There also appeared a great mass of poetical works, as full of imaginative outreach as were the religious speculations of this remarkable people. Not like the Chinese, restricted to the field of the lyric, the Hindus early produced two great epic poems, which challenge comparison with similar works of any other land. Of these the *Ramayana* details the adventures of a god, an incarnation of Vishnu, who is born upon earth, marries an earthly princess, and conquers the island of Ceylon. It is full of the supernatural, as is also its successor, the *Mahabharata*, which, however, more distinctly relates to human affairs. The latter describes a long civil war between two legendary dynastics, the

Kurus and the Pandavas. The reality of the war which has been supposed to have taken place about the twelfth century B. C., is as questionable as is that of the contest of the Iliad, and while the poem may contain, in the midst of its fanciful extravagances, many historical elements, it would be no easy matter to isolate them. It is, however, full of religious conceptions, comprising theological and cosmological speculations, a system of Hindu ethics, and a compendium of the Brahmanical faith. With these is combined an extravagant use of supernatural incidents, indicative of the unpruned luxuriance of the Hindu imagination.

It is not our purpose, however, in this chapter to enter into any detailed description of the literary work of the several nations, but to confine our attention to its general characteristics, and the mental evolution indicated. The great epics of India are paralleled in quantity and quality by its lyrics, of which many interesting and valuable specimens are extant. In connection with these may be mentioned the dramatic literature, in which Kalidasa, the most renowned lyric poet, achieved preeminence. Of his dramas that of *Sakoontala,* or the *Lost Ring,* is of a high order of merit, and has elicited general admiration. There are no tragedies among these productions. Tragedy, indeed, was alien to the disposition of the Hindu writers, who were by nature and education opposed to bloodshed and violence, religious in their mental tendencies, and accustomed to peaceful domestic life. The representation of a death scene, or of any minor acts of violence, was repugnant to the taste of authors and audiences, and the plays consist mainly of love scenes, magical incidents, and humorous and burlesque situations, in which the priests are often set in a ridiculous light. This fact indicates that literature was no longer confined to the members of the priestly caste, but had fallen to some extent into the hands of the laity.

We may conclude this brief account of Hindu literature with a reference to its wealth of fairy tales and fables, in which minor species of composition the imaginative Hindus excelled. Much of the lore of this kind which forms part of modern European literature had its origin in India, and has crept westward from land to land through the long lapse of the ages. The literature of the fable seems peculiarly adapted to the Oriental fancy in general; but, so far as any written record goes, it first arose in India, whose stores of fable lore now exist in the *Pancha Tantra*, or "Five Books," a prolific source of modern fables. This has been translated into nearly every language, and endless imitations of its stories are extant. A modernized Hindu version of the same work is the *Hitopadesa*, or "Friendly Instruction," in which the fables are strung together so as to form the semblance of a continuous story.

The literature of the fairy tale and romance also attained a great development in India, in natural accordance with the luxuriance of the Hindu imagination. There are several collections of these fanciful tales, in each of which the leading incident forms a framework for stories of the most diversified description. This is the form familiar to us in the *Arabian Nights' Entertainments*, which doubtless obtained its cue, and apparently much of its material, from the Indian tales. The latter are, indeed, supposed to have been the original source of most of the Arabian, Persian, and western fairy tales and romances, though but few of the corresponding Indian texts are extant.

It is remarkable that two nations in such contiguity as the Hindus and the Chinese should have differed so remarkably in their intellectual evolution; the one displaying an extraordinary development of perceptive literature, such as history, geography and ethics; the other developing to a yet more extraordinary extent the literature of the imagination and reason, such as poetry, romance, and religious speculation. We have given particular attention to the mental history of these two peoples, on account of their marked confinement to, and great development of, opposite fields of human thought, and of its striking influence upon their respective careers as nations.

We need devote less space to the literatures of the other primitive civilizations, since they display no characteristics strongly different from those already considered. The voluminous early literature of the Persians has left but a fragment in the extant Avesta. This closely resembles the parallel Vedic literature in character, being strictly theological, and made up of hymns and prayers, revelations to mankind, ritualistic and ceremonial observances, and a religious philosophy whose character we have already described. For ages this theological lore remained the staple of Persian literature, though it displayed little of the luxuriance of the Hindu imagination. The social life and political organization of the Persians were, indeed, strikingly different from those of their Indian kindred. Their mode of life grew energetic and warlike, the influence of the priest declined and that of the king increased, and in the days of the Persian empire a tendency to historical composition was manifested, though no great progress in this direction was made. In fact the Persians of the empire were but partially civilized, and while sacerdotal influence, with its tendency towards intellectual production, had declined, the secular life was too active, and those engaged in it too uncultivated, for any energetic literary labor.

Further west two remarkable early literatures made their appearance, which display a contrast resembling, though much less marked, that seen in the mental productions of India and China. These are the literatures of Egypt, and of Babylonia and Assyria. If we seek the causes of the difference of literary development in these peoples, they will not be difficult to find. Egypt was for ages essentially peaceful and isolated, while its sacerdotal caste attained an influence only second to that of the Brahmans of India. Babylonia, and more particularly Assyria, were essentially warlike, the government attained supremacy, and the interests of secular life quite overruled those of religious observance. In consequence we perceive the literature of Egypt strongly tending to religious subjects, while that of Assyria became largely secular and practical in character.

Of the conditions from which the Egyptians emerged into civilization we are in absolute ignorance. They form the one nation of mankind which has no traditional or other indication of its primitive state. Something, indeed, can be conjectured from the crude condition of the language, the hieroglyphic system of writing, and the religious conceptions of the Egyptians. But civilization began with them at such a remote date, and they were so isolated from any other people, that nothing can be gathered from the study of contemporary nations and languages concerning the primitive history of the Egyptians. We find them emerging into history with a highly developed mythological system of faith, indicative of a long period of imaginative activity, and with a supremacy of the sacerdotal influence which seems to point to long-continued peaceful relations.

The early literature of Egypt was in the hands of the priests, its audience was a highly superstitious people, in whose life history religion played a very important part, and its staple was naturally religious dogma. Yet it must be remarked that the Egyptians gave more heed to the concerns of this life than the Hindus, industry and art became highly developed, an autocratic political system was established, and the practical affairs of ordinary life were diligently attended to. This national progress had its influence upon the literature, which paid considerable attention to historical and other secular subjects.

Much of the ancient Egyptian literature is still extant. Considered in regard to questions of style and literary ability, it is by no means satisfactory. The historical documents are fragmentary, and it has so far proved impossible to extract from them a consecutive history of the country. In fact we do not possess the connected annals of a single reign. The religious documents are equally unsatisfactory and disjointed, and critics have had a severe labor in seeking to arrange them in logical order. There is none of the systematic method, the philosophical acumen, the acute thought, which are such marked features of the Hindu literary productions. In fact we find ourselves dealing with a people not possessed of the elevation and acuteness of intellect of the Aryans, and whose thought is, in consequence, more devoted to the demands of the perceptive faculties and to the requirements of material progress.

The most important religious work of the Egyptians is the "Funeral Ritual," or "Book of the Dead." This is a collection of ritualistic prayers and magical incantations supposed to be necessary to the disembodied soul in its journey through the land of shades. In it we have embodied much of the philosophy of the Egyptians concerning the relations of man to the gods, and the supernatural conditions of the universe. The word philosophy, however, illy applies to this confused and largely incomprehensible medley, which serves mainly to indicate to us the lack of unfoldment of any of the higher powers of mental activity. There are several other religious works, equally poor in thought, though some of the hymns have a certain merit of style. The moral treatises were superior to the religious, if we may judge from the scanty relics which we possess.

In poetical composition the Egyptians were not destitute of ability, and they even attained to the dignity of epic composition, in a poem celebrating the deeds of Rameses the Great, of which five copies are extant. But it is a weak, scanty, and barren affair as compared with the great epic works of India and Greece. In works of fiction some skill is displayed, while the art of letter-writing gained considerable development. In regard to the literature of practical life it is evident that some scientific attainments were possessed, particularly in the fields of astronomy and geometry. There was some progress also in chemistry, metallurgy, and medicine. On the whole, however, so far as literary merit is concerned, the Egyptians remained at a low level, the perceptive faculty of their minds alone was well developed, and their outreach into the kingdom of the imagination was weak and faltering, while their religious philosophy was a confused medley of myth and magic.

In Babylonia the literature, though it began in that supremacy of theological speculation so characteristic of early thought, soon became devoted in a considerable degree to secular subjects, and in the later Assyrian period grew almost as purely secular and practical as that of China. There seems to have been an active development of the literary spirit in Babylonia at a very early date, and many collections of books were made, every large city having at least one library, in imitation of which the royal libraries of the Assyrian cities were afterwards formed. The subjects of the earlier records were of a theological character, being confined to hymns and mythological legends. Some of these hymns strikingly resemble the psalms of the Hebrews. A collection of them existed which was used for ritualistic purposes and looked upon as inspired, thus occupying a position similar to that of the Rig-Veda. Somewhat later than the hymns appeared mythological poems, some of which have recently excited great interest from their close resemblance to the early Hebrew records.

In this process of literary development we discover an interesting parallel to the literature of the Hindus and Persians. First appears a collection of hymns, simple lyrical effusions, which in time acquire a sacred character. Afterwards an era of speculation begins, and the vague mythology of the earlier period becomes developed into a consistent cosmogony and religious philosophy. This philosophy, with the Babylonians, was embodied in poems, two of which we possess intact, and part of a third, with fragments of others. These form part of a remarkable epic, which centres around the adventures of a great solar hero. It is of high interest, as being probably the earliest epic poem ever composed and as containing the Babylonian version of the story of the Deluge. It is highly extravagant in its imaginative conceptions, but in mental outreach is superior to anything in the extant religious literature of Egypt.

Among the remaining mental productions of the Babylonians have been discovered a collection of fables, and traces of a very extensive legal literature. That science was also cultivated we are well aware, and astronomy in particular made important steps of advance, far more so than in any other of the ancient kingdoms down to the times of Greece. In fact, the Accadian inhabitants of Babylonia displayed a grade of mental ability not shown in the early records of any of the acknowledged Semitic tribes, and which lends force to the arguments of those who claim that these Accadians were not Semites, but belonged to some other of the races of mankind.

However that be it is certain that the Semitic Assyrians, who succeeded to the empire of Babylonia, were destitute of any high literary talent. Assyria, indeed, was a land of soldiers, with probably little taste or leisure for literary pursuits. Such literary work as was done must be ascribed largely to the priesthood, and mainly took the form of the study, translation, and paraphrase of the Babylonian remains. The works of the Accadians seem to have been studied as diligently as the Chinese studied those of Confucius, or the Brahmans those of the Vedic poets. It was an illustration of a tendency which has repeatedly appeared in the literary history of mankind, and still exists in the modern devotion to Greek and Roman authors. Syllabaries, grammars, dictionaries, and reading books of Assyrian and Accadian were prepared, and the Babylonian works were translated and edited for the Assyrian libraries.

It was at a later date in the Assyrian empire that its scholars attempted any original work, their minds being cramped for centuries by the influence of a literary dead language. The literature which they afterwards produced was largely historical. No valuable imaginative works appeared, but in law, history, topography, and the other provinces of practical thought considerable activity was manifested. The Assyrians, in fact, resembled the Chinese in the character of their literary productions, and bore also a resemblance to the later Romans. Like the Romans their whole national life was devoted to war, and the effect of this upon their literature seems to have been its confinement to matters of immediate practical importance.

In the literary development of these ancient nations there are certain highly interesting phenomena, to which we may again briefly refer, as they indicate what may be the natural course of development of the human intellect. In them all there first appears a system of astronomical and meteorological mythology, unphilosophical and disconnected in its elements, which is the outgrowth of the primitive unfoldment of the human reason, with its crude and metaphorical speculations as to the constitution of the universe and the relations of man to the divine. This evolution of mythology preceded the era of recorded literature. There succeeded, except with the Chinese, a period of religious lyrics, which were the first of written works. These lyrics in time were invested with sacred attributes, and became themselves objects of worship. A ceremonial age succeeded, in which sacrificial and other rites replaced the simpler and more devout worship of the lyrical age. In Egypt no trace remains of the lyrical era, but the ritualistic system became well developed. Subsequently a period of religious speculation arose, and a more or less coherent and reasonable philosophy of religion emerged. This period gave rise to the emanation theory of the Brahmans, the solar epic of the Babylonians, the dualistic conception of the Persians, and the confused ideas of metempsychosis and absorption entertained by the Egyptians. Even the Chinese, without passing through the intermediate phases, entered the era of religious speculation, and produced the involved fantasy of Lao-tsze. The evolution of the sacerdotal system here described preceded the birth of secular literature, except in China. Its completion was followed by a slowly growing conception of the dignity of human life, and an attention in literature to purely human affairs, which took in some cases largely the poetic form, but from which the sober details of prose literature eventually everywhere emerged.

The civilizations above described were those in which literature was indigenous, and developed with little or no influence from without. Some few others might be mentioned, of a more barbaric type, but allusion to them does not seem here necessary. In the further prosecution of our subject we have to deal with literature whose evolution began in, and was deeply influenced by, the thought records of earlier nations, and in which, therefore, we cannot look for the regular process of development above described.

The Hebrew literature, the most familiar of those of the far past, and the one that has been of the most importance in the history of mankind, is also of essential value in the history of literary evolution. It was probably not indigenous in its origin, but seems to have been based upon more ancient literatures, particularly that of the Babylonians. Such, at least, is a natural conclusion from the fact that the stories of creation and the flood given in Genesis closely agree with those of the Babylonian epic, of anterior date. That Persian and Egyptian elements enter into this literature is also generally admitted. But with all this there are powers and peculiarities in Hebrew literature which widely separate it from those of the nations named, and give it an isolated position among the thought records of the world.

The Hebrews were not a people of luxuriant imagination. Their mental turn was towards the practical, and they dealt with the wild fantasies of the Babylonian epic in a sober and practical vein that reduced them almost to the level of ordinary history. The Hebrews concerned themselves with man rather than with the gods, and the early chapters of Genesis, despite the remarkable events which they narrate, are given as the actual history of mankind. The cosmogony is as sober and simple as it can well be made. It lacks the fantastic extravagances of other early cosmogonies, settles the story of creation in a few brief verses, and comes almost immediately to the history of mankind, in which it very quickly escapes from the realm of the supernatural. The story of the Antediluvians is that of ordinary men, with the exception of the length of life ascribed to them, and the latter is sober reason compared with the extraordinary life periods given to the aboriginal kings of Egypt and Hindustan. The story of the deluge is, in its turn, sobered down into the dry realism of actual history. When we compare Genesis with the parallel record found in Babylonian literature, we cannot but be impressed with the essential practicality of the Hebrew mind, and are almost forced to the conclusion that, if left to their own isolated development, their ideas of the domain of the supernatural would have been as barren as those of the Chinese. They are certainly almost destitute of the mythological conceptions which flourished so luxuriantly elsewhere.

The literature produced by this remarkable people is full of secular elements. It is largely historical. And its historical details are so enlivened with the practical touches of ordinary life that, despite the mingling of supernatural elements, and the probable influx of traditions, the story of Abraham and his descendants impresses us as in the main a narration of actual events. The same secular significance is strongly displayed in the legal literature. The staple of this is the relation of man to man, not of man to the deities, as in the laws of Manu, and the code of the Pentateuch is a system of human laws against crime much more than of divine laws against sacrilege.

Yet the priesthood had become prominent among the Hebrews at an early date, and the influence of their conceptions shows itself in all the literature. The original leaders of the Hebrews, in fact, possessed both religious and secular authority. The priesthood was separate as a class from the military leaders, yet they were in close harmony; and it was late in the history of the nation when an antagonism divided the two classes, and the powers of church and state became distinctly separated in the Hebrew dominions.

In considering Hebrew history and the literature which emerged from it, there are some important facts to be taken into account. The Hebrews were differently situated from the Egyptians, the Hindus, and some other early nations. The priests of the latter had little difficulty in keeping their people to the faith. Religiously they were isolated, and untroubled with theistic invasion from without or revolt from within. They had full leisure to indulge in philosophical imaginings. Not so the priests of the Hebrews. They were at war throughout their literary period, fighting against the flood of polytheistic faith that ever threatened to overflow their borders, and even against their kings, who sought to introduce idolatry. The condition was very different from that of two contiguous polytheisms. These may mingle, and partly combine, without loss of the essential elements of either faith. But a monotheism cannot harmonize with polytheism. In this case union would be destruction. Yet in Palestine the Hebrew race was surrounded by and in constant communication with polytheistic peoples. The unity of the old life of the desert also was gone, and the manifold influences of an agricultural life in a mountain country pressed upon the transplanted race. Their change of situation created an internal tendency to embrace polytheism, and against this tendency the priesthood was kept steadily at war.

Thus the Hebrew priesthood could not drowsily enter the philosophical and critical stage of settled faiths. They were forced into a battle for life, a steady and persistent intellectual exercise, in which promises, invectives, denunciations, and even personal assaults on, and wager of battle with, the adherents of polytheistic religions replaced the quiet philosophizing of other faiths. This struggle of monotheism against the invasions of polytheism was the great incentive to the higher efforts of Hebrew literature, and its influence is shown alike in the historical, the poetical, and the prophetical books. The writers were thoroughly in earnest. They were mentally warmed up to battle. There was no room among them for the dreamer or the speculative critic. Their works were in no sense retrospective. They were written to meet existing facts and dangers. Thus they possessed two of the prime elements of literary worth —earnestness of purpose and emotional warmth and energy.

This marked distinction of faith between the Hebrews and contiguous nations, and the religious hostility thence arising, were the principal causes of that peculiar isolation of the Hebrews as a people which has had no counterpart among polytheistic nations. No lukewarmness of belief was here admissible. There could be no mingling of races or of religions. To yield the outposts was to yield the citadel, and the religious leaders of the Hebrews held their people in hand with all the earnest watchfulness that the leader of an army shows towards his troops. Denunciation of idolatry, prophecies of its downfall, of disasters to all who ran after strange gods, of the coming triumph of the true believers, and of the ruin which the hand of the one and only God would pour upon the heads of the foes of this chosen people,—such form the moving impulses of these vigorous mental outbursts, which ring like the tones of trumpets through the ages.

The prophet, as we have said in a preceding chapter, is a peculiar product of the Semitic race, and especially of its Hebrew branch. Prophecy became greatly developed in Hebrew literature, apparently as an outcome of the above described situation of the people. In the warfare with polytheism denunciation alone was insufficient. Threats of disasters, future as well as immediate, to their foes for idolatrous sacrilege were a natural outcome of the situation, and the prevision which we see already displayed by Abraham became intensified in his successors, and resulted in the intellectual energy of the prophetical writings.

Imagination with the Hebrews, though repressed and toned down, was by no means wanting. Their practical intellect led them to a close observation of the facts of external nature, though it checked the tendency to deep mental involution. Exactness of observation is displayed in the correct and apposite imagery of their writers. This imagery is brought in less as a literary adornment than as a natural accompaniment of the thought. There is no playing with fancy, or devotion to images as beauties in themselves, but the image and the thought are dropped together from the author's mind, the two sides of one idea. And underlying all the earnestness, directness, and truth of imagery of Hebrew literature, there is something more. The religion of the race is a concentration, and the like concentration is displayed in the prophetical and poetical literature. Their God is no deification of earthly conditions, but is the illimitable personified. He has no history and no personal adventures, like the deities of polytheism. He stands alone, supreme, without form or limit, creating the universe by a word, controlling it with a thought. He is the illimitable oneness of the broad desert, of the cloudless atmosphere, of the endless expanse of the heavens; without beginning or end, without location or history. Such is the deity (more or less enfeebled by personification in some writers) who underlies the Hebrew religious literature, and gives it a grandeur and a frequent sublimity which excuses its occasional narrowness. The stream flows in one channel, but with a vigor intensified by its confinement.

As to the dates of the various Hebrew books, recent criticism has rendered the whole matter so uncertain that nothing definite can be said. It seems highly probable that the earlier works assumed their present shape at a late period in the history of the nation, and that important changes may have been made in them when reduced to a written form, they perhaps having been previously preserved solely in the memory of the learned. There is reason to believe that the lyrical form of poetry very early appeared, and the titles of two ancient collections, the *Book of the Wars of Jehovah,* and the *Book of Jashur,* have been preserved. Possibly some of this early poetry has continued to exist in a transformed condition in the later lyrical and pastoral poetry of the nation, which displays a simple fervor and earnestness resembling that of the lyrical portion of the Rig-Veda, and a concentration and sublimity of thought and diction unequalled in the poetry of any other nation.

The cultivation of prose literature began early with the Hebrews. A scribe was attached to the royal court from the period of David, the annals of the nation were carefully kept, and the early chapters of the books of Samuel indicate, by their masterly style, an older development of the art of prose composition. The prose literature is direct, simple, and earnest, details life vividly and dramatically, and displays an intellectual ability in accord with that shown in the poetic books.

The preservation of their historical annals by the Hebrews, in more accurate and consecutive detail than we can find elsewhere in the older literatures, unless in the literature of China, renders it probable that they resemble the Chinese also in the cultivation at an early date of the other forms of secular literature. We have evidence of the existence of an abundant poetry of ordinary life in the preservation of the *Song of Solomon,* of relics like the *Song of the Well* (Num. xxi. 17, 18), and from the titles of popular airs attached as names to the Psalms. Most probably, indeed, there was a double literature in Palestine, a religious and a secular, of which the former has been sedulously preserved, while, as a rule, only such portions of the latter as had some religious or historical significance were retained. A rich sediment of the practical wisdom of the people still exists in the *Proverbs,* the pearls dropped from the household poetry of centuries.

It might be desirable to enter into a more detailed description of the literature of the Hebrews, which, with all its practical turn and devotion to immediate interests, manifests an intellectual skill and energy, a vivid imagery, and a concentrated grasp and power, which carry it often into sublimity and give it a literary value reached by few of the ancient literatures. Lack of space, however, forbids, and we must next consider the literary history of the later civilized nations, which, while they indicate less clearly the early stages of the evolution of thought, are very important in the study of its subsequent development. In them literature becomes an art, tamed of its wildness and reduced in its proportions, and brought down from the ill-formed colossus of the far past to a lifelike grace and beauty resembling the work of the Grecian chisel.

Greek literature, in its early stages, was indigenous. It had attained some degree of development before the active Greeks became acquainted with the literatures of Egypt, Assyria, and Palestine, and probably to a greater extent with that of Phœnicia, now unfortunately vanished, though it may have been voluminous in its day. And in the period of indigenous development of the Greek mind it is interesting to perceive that there exists a close parallel to the other cases mentioned. Its first indications are in the production of an intricate mythology, of astronomical and meteorological origin, indicative of a long primitive unfoldment of the imagination in the religious field of thought. This mythology resembles in general character the others mentioned. It consists of a series of disconnected stories of the gods, confused, overlapping, without harmony or interconnection, disjoined conceptions which arose from various sources, and flung together without thought of their manifold incongruities. With these earlier stages of the development of thought we are not here concerned. They have been reviewed in a preceding chapter. We have but to consider the subsequent unfoldment of literature from this basis of mythologic conception.

As in all the other cases considered, the simple and devout religious lyric seems to have next appeared. Of this most ancient literature nothing remains. We know of it only through tradition. Mention is made of the songs of Linus and others, which appear to have had a seasonal astronomical significance. The hymns of the legendary bards, Orpheus, Musæus, and Eumolphus, were perhaps later in date, as they indicate a fuller development of mythologic ideas. These hymns, like the lyric portion of the Rig-Veda, may have been the productions of the devout Aryan horde while marching from its ancient home to conquer a new seat in remote lands. But the development of this religious poetry failed to pass through the phases which it manifested in India. There is no reason to believe that there followed a well-defined and long-continued ritualistic age. On the contrary the indications are that secular poetry, of a warlike strain, quickly succeeded. And before long we find this warlike muse breaking out into the grand epic song of the *Iliad,* the most remarkable production of the ancient literary age of the world.

There are satisfactory reasons why the Greeks so widely diverged from their kindred, the Hindus, in the character of their literary development. The conditions of nature and life under which they had come strongly influenced their mental unfoldment. The Hindus became agriculturists, and in a land in which nature is overwhelming in its manifestations, and man to a certain extent the sport of the elements. Wild beasts, poisonous serpents, devastating storms, scorching suns, the mighty and silent flow of the streams, the vast outreach of level plains, all tended to depress their spirits, and turn them towards fatalism and a blind and unreasoning fear of the elemental powers. They became devout and superstitious, and nature vigorously aided the efforts of the priests to gain supreme control over their minds. With the Greeks in their new home the conditions of nature were strikingly unlike the above. No country on the earth is more diversified, and more fully broken into mountain and valley. No sea presents a more varied and beautiful array of islands. No land is more smiling, no ocean more bright and gentle, no sky more clear and soft, no air more balmy and delightful. The plains of the Ganges, with their rich and abundant productiveness, were replaced here by a soil of little fertility, which needed diligent cultivation to produce sparse returns. In Greece man was in no sense the sport of the elements, nor was he at once fed by the free hand of bountiful nature and helpless before the angry throes of this same nature in her wilder moods. There was everything to bring out the feeling of human power, and the belief that the elements are the patient slaves of man, not his wilful masters. Add to this the commercial sea-going habits to which the Greeks were driven by the infertility of their soil, and incited by their favorable situation and the example of the neighboring Asiatics, and we need have no difficulty in comprehending the wide divergence of their mental development from that of the Hindus.

Certain interesting results arose from this peculiarity of situation. Religion failed to gain an overmastering influence upon the Greek mind. The priesthood sank in importance, instead of rising. It failed to combine into a coherent and powerful class. The Greek grew irreligious. Man was the one essential fact in his creed. The gods were of secondary importance. Probably in consequence of this the mental development of the Greeks took a peculiar turn. Instead of evolving a philosophy of the universe on the basis of their religious faith, they continued coldly to accept the mythologic fictions, with some effort to combine the incoherent mass into a harmonious whole, while there prevailed a constant tendency to bring heaven and its host down to the level of man, and to place the gods and humanity on nearly the same plane. Thus when the active Greek mind entered its philosophical stage the popular religion offered no basis for a philosophy of the universe, and the speculative thinkers broke loose from the trammels of mythology and based their speculations on observed facts. It was the first definite entrance of the scientific element into the mental unfoldment of mankind.

The secularization of poetry is one of the earliest and most striking manifestations of the Greek literary unfoldment. In no other nation do we find a production of the character of the *Iliad* at so early a period of mental progress. The works of Homer have, it is true, their mythological elements, but even at this early date the gods are played with by the mind of the poet. They are but a step above man, mingle in all human affairs, take active part in earthly wars, and are even wounded by spears wielded by mortal hands. In the *Odyssey* man becomes more the sport of the elements and the higher powers. The helplessness of man upon the raging sea is here acknowledged, in contrast with his self-sufficiency upon the land. Yet the firm heart of the wandering hero carries him safely through the perils of the deep, and enables him to withstand the anger of opposing deities. There was nothing in the universe of the Greeks to which human vigor and courage might not attain.

All the theology of Greece was embodied in its poetry. None of the philosophers or prose writers dealt with the ancient elements of faith. Even the poets soon ceased to inculcate the mythological doctrines. Æschylus alone wrote religious dramas. The later dramatists dealt mainly with secular affairs. Education was followed by scepticism. The religious conceptions steadily declined, while the mind steadily advanced. There were no religious books, with a controlling character of sacredness. The writings of Homer and the theological works of Hesiod were the only scriptures of the Greeks. These were held in high esteem in consequence, but they never gained the standing of inspired literature, and lacked the arbitrary control of authoritative writings over the minds of believers. Neither Homer nor Hesiod claimed inspiration, or denounced unbelief. These authors were evidently of the laity and their works secular productions, to which no character of sacredness or prescriptive authority could be imputed.

While thus every influence, alike of nature, of habits, and of mental strain, tended to turn the minds of the Greeks towards the production of a secular literature, the same influences acted to repress the luxuriance of the Aryan imagination, and to instigate a moderate and artistic development, in place of the extravagant figments of the eastern Aryan fancy. The low mountain ranges, broken seas, narrow plains, small islands, restrained forces of nature, graceful and beautiful forms of the Grecian peninsula, all had a repressive influence. It is the limited which we find in the works as in the land of Greece. The imagination was toned down by nature. An artistic moderation is everywhere indicated. It is this restriction of imaginative exuberance which gives the charm to the writings of Homer and his successors. All the fervor of the Aryan imagination is evidently there, but it is sobered down and brought within the bounds of artistic limitation. Nature excited no terror in the Greek mind. She awakened only a love of beauty, and that the beauty of form and outline, not of extension and immensity. The Greeks are the only instance of a highly imaginative people whose normal development was towards irreligion, and who in consequence early gravitated to a secular literature, inspired only by the needs and deeds of man, the sentiments of human love, ambition, and aspiration, the beauty of friendship, the value of courage, the humble concerns of daily life, the charms of nature, the supreme worth of the human intellect. The Greek mind thus came into intimate sympathy with nature. It studied, it loved, it worshipped nature. But this was not nature from its practical, but from its poetical side. There was little thought of nature as an instrument of subsistence. Subsistence, indeed, troubled the Greeks but little. They were frugal of food, cared little for clothing or shelter, and loved to live out of doors, under their bright skies, beside their limpid and gleaming seas, in intimate communion with their beautiful surroundings. To their ardent imagination, nature had a soul as man had. The groups of waters, groves, and vales formed deific communities. The trees loved man as man loved the trees. Thus in fostering the growth of secular literature the Greeks fostered it from the imaginative side of the mind. Their intellect was essentially deductive. Facts were to them of secondary importance. The slenderest wings of reality served to bear their far-flying imagination beyond the realms of time and space. They were too ardent, too overflowing with the enthusiasm of glad young thought, to be chained down to sober fact. They were still in the boyhood of mankind, the youthful era of mental growth. The period of the purely perceptive had passed away. That of the imaginative had reached its maturity. The age of logical reason was as yet in its infancy.

That the Greeks were active students of the literatures of preceding peoples we have no reason to doubt. And if we possessed the lost literature of the energetic Phœnician nation, with their practical, enterprising, investigating tendency doubtless controlling it, we might find the moving springs of the Grecian inspiration. The mind of man never suddenly attains high literary eminence from its own powers alone. Every new step upward is made from the level attained by previous thinkers. It must at the same time be borne in mind that a narrow line of thought is likely to attain a greater height than a broad one. When we perceive a people making any rapid and marked intellectual advance we are apt to find them to be specialists in thought, and their lofty elevation to be due, in part at least, to the narrowness of their line of motion. Such was the case with the Greeks. Their mental development was a special one, and was probably instigated by the action of the thought records of more primitive alien peoples on a race of peculiarly ardent imagination.

In the works of Homer we have the key-note of all Grecian literature, namely, a deep-felt sympathy with nature and with man, and an exalted sense of the dignity of human kind. There is nothing of the impersonal, no idea of pure force or disembodied thought. All is personal, and the physical world underlies all. The imagination is active, but its activity is devoted to the visible facts of sea and land, to men's deeds, lives, and motives. The close sympathy with visible nature tended to repress any extravagant flights of this faculty. A deep sense of the beautiful in nature, a loving study of the charms of the physical, a sympathy with grace of form and harmony of tone, in short a constant cultivation of the outer senses in the service of the imagination, with little involution of thought, were natural consequences of the physical and mental condition of the Greeks.

From the period of the Homeric poems the literary development of the Grecian race displays an extraordinary unfoldment of poetic skill. In the early age this inclined to the epic. The *Iliad* and the *Odyssey* gave the cue to the feebler works of the Cyclic poets, in which the deeds of the heroes and the remaining traditions of the Trojan war were abundantly sung. This warlike strain of the Ionian epic was contrasted with the peace epic of Bœotia, the production of Hesiod and his school. The *Theogony* is the most detailed account extant of the early myths, while the *Works and Days* brings down to us the domestic and rural life of the ancient Greeks, the deeds of the heroes of the spade in contrast with the Homeric heroes of the sword.

Men had not yet begun to study their own minds. They sang what was done, not what was thought. The era of reflection came later, when the feelings and emotions of the mind assumed importance, and the uneasy stir of the human soul made itself felt in every nerve and fibre of the human frame. The merit of the doer declined as that of the thinker grew more prominent, and the lyric song succeeded to the long reign of the epic muse.

There was something extraordinary in the sudden and vigorous burst of lyric song that followed the decline of the epic. Like the latter it arose in Ionia, the Grecian settlement most exposed to Phœnician influences. From the shores of Ionia and the bright islands of the Archipelago came a flight of sweet singers, winging their way to Athens as the centre of wealth, and making this city also the centre of culture.

Archilochus, Alcæus, Sappho, Anacreon, Simonides, Pindar—such are the rarer names of that galaxy of poets who in elegies and iambics, songs and odes, of the greatest variety of form and diversity of subject, war, love, politics, pleasure, and eulogy, made the air ring with rich strains of lyric songs, and stirred the ardent Grecian soul to a pitch of enthusiasm which we, in these later prosaic days, can never fully realize.

The continued development of the Greek mind found its next resting-place in the drama, that form of literature which naturally appears at a certain stage in the unfoldment of the intellect. In Greece as in India the drama was indigenous. We can vaguely trace its slow growth; that of tragedy from the festivals of Dionysus, in which rustic worshippers sang the victories and the sufferings of the god; that of comedy from the village songs to the same deity, the wild license of the vintage festival. The chorus of the rustic singers became in time a choral dialogue, and then a dialogue between two of the singers, and in a developed form composed an essential part of the Greek drama to its latest days. From this simple beginning emerged the scenic display and the highly poetical diction of the Attic tragedy and comedy. The influence of this new form of literature was great and instantaneous, and the older forms of poetry were, for the time, crowded out of existence. It appealed alike to rich and poor, to cultured and ignorant, and the most active thinkers of Greece at once made the drama their favorite channel of expression. Its development was rapid, both in form and subject. Tragedy confined itself to the legendary tales, but of the three successive great tragic authors, Æschylus, Sophocles, and Euripides, the first was an ardent advocate of the mythologic faith; the last a sceptic, who played with the old dogmas, but gave the strong flavor of human interest to his productions. His plays retain the husk of the mythologic legends, but are filled with the kernel of the philosophic doubts of his period.

The early comedy was remarkable for its freedom of thought and of speech. It mainly took the form of biting political satires on the demagogues of the day, whose spiciness somewhat relieved their stinging sarcasm. There is a degree of childishness in the plots and management of these early comic dramas which indicates a primitive stage of literary evolution. A play of Aristophanes has much of the element of the local burlesques of our day. This was much less the case with the later comedy of Greece, from which personal satire had vanished, and which dealt with the general foibles of the community in better developed plots. There was doubtless some lack of the intellectual merit of the older plays, but probably a considerable progress in literary form.

The grand development of Greek poetry was quickly followed by a development of Greek prose. History, philosophy, and oratory came into existence, but from the poetic rather than from the practical point of view. Herodotus was the earliest of the prose writers whose works are extant. There were earlier writers of philosophy, history, and geography, but little more than their names remain. The history of Herodotus was a prose poem. The imagination and love of beauty of the Greeks dominate his work, and give it an undying charm. Wandering over the civilized world with active inquiry and ardent eyes, he paints the story of the past in colors that reveal the soul of the artist in the pen of the historian. To the Greeks visible nature formed the whole of existence, but it was a nature with a soul. They approached nature, not with the cold glance of science, but with the ardent eye of emotional inquiry, and this mental condition shows itself in all their works. The philosophers were restrained in the boldness of their speculations by the restriction of the Greek point of view to the visible, but from this they deduced far-reaching conclusions. The orators were more persuasive than logical, and the audiences paid far more attention to the roundness of their periods and the impassioned fervor of their diction, than to the logical sequence of their argument. The historians rather painted than narrated, and Xenophon, while more cultured and artistic, is as picturesque as Herodotus.

Such are the main characteristics of Greek literature. It is the literature of the real rather than of the ideal. But it is a reality everywhere infused with ideality. It displays an affiliation with visible nature; a mythology which is visible nature deified; a chastened imagination with its roots in the visible; an art based on outer nature, and therefore perfect as the art of form, but not as the art of expression, the art of the body, not of the soul; a philosophy, a poetry, a history, an oratory, similarly based on the visible, but dealing with mundane topics from the emotional and imaginative side, not from the prosaic and practical. The literature thence arising was in a certain sense narrow. Like that of the Hindus, it was the highest expression of the imaginative faculty of the mind, but of an imagination chained down to the world of the visible, not set free in the world of the supernatural, like the Hindu. It was in consequence artistically limited in range. It dealt mainly with the results of sense observation, not with those of mental involution. The inner world of the soul shows but dimly through the lines of Greek thought. The outer world of the sense is everywhere dominant. Plato made the most strenuous effort to escape this tyranny of the visible over the mental, yet even he but partly succeeded. His philosophy deals with the idea more than with the ideal. His mental inspiration was still the visible, with its imagined intellectual double. Everything must possess form and substance. Plato's *idea* was a thing, his *good* a personality. His God was the *good* embodied. All the faculties of the mind were actual things, not abstract existences. His method, too, was strictly Grecian. His philosophical essays are poems. The riches, breadth, and sweetness of Greek thought are displayed in his productions. He is, like his predecessors, strictly deductive. He thinks continually, and his thoughts, far more than the facts of actual nature, are the basis of his philosophy.

This binding down of the imagination to the visible naturally led to a higher condition of thought development, that of exact observation and logical conclusion. For its inception there was only needed an intellect not carried away by imaginative fervor, and strong and original enough to break loose from the prevailing habits of Greek thought. Such a thinker appeared in Thucydides, the historian. With him history ceased to be a series of disjoined pictures, and became a philosophical and logical sequence, in which were studied the motives as well as the deeds of men, the causes and consequences as well as the movements of events. And this study was made with the cool mind of the scientist, not with the heated fancy of the poet. The work of Thucydides is a scientific unity, in which rhetoric gives place to logic, and beauty of expression yields to accuracy of description.

But the scientific age of literature had its definite beginning with Aristotle, one of the latest authors of the classic period. Reason replaced imagination in his mind. A new age dawned upon the world with his birth. He deified logic, and laid the foundations of most of the physical sciences in his indefatigable inquiry and observation. Instead of analogies he sought for actual relations, and the imitative was replaced in him by the comparative and inductive. The thirst to know succeeded in his active mind the older inclination to invent, and devotion to the beauty of form gave place to the desire for precision of statement. His style and matter alike were alien to the Grecian mode. There is no poetry in his writings. They are devoid of imagination, and made up of dry statements of facts and logical conclusions.

The avidity with which the teachings of Aristotle were received shows that his countrymen were in touch with him. The new literary method found an audience prepared. The Greek mind was weary of its unsatisfactory religion and philosophy, and turned to the study of facts as to a new revelation. The age was ready for the man. Observation of nature as an aid to imagination became now observation as an aid of knowledge.

As soon as the Greeks ceased to see a soul in the inanimate they began to question what was the actual constitution of the world of the physical, and science was born.

Aristotle was the founder of a school of scientists. But Athens was no longer a happy foster home for literature, and it migrated to Alexandria, where it came under the sheltering wings of the Ptolemies. The literary method of Greece here sank into decrepitude. Study of the old replaced production of the new, as in all declining literary periods, and criticism succeeded invention. But while the old literature of the imagination died out, with but a few expiring gleams of its former spirit, the new literature of science made great progress. Science is always original, as it must constantly go to nature for its subjects and its inspiration. It cares nought for the old, but always craves the new, while rhetoric is valueless to it in contrast with logic and precision. Such was the last phase of Grecian literature. The scientific research of the later authors made many and valuable discoveries in astronomy, geography, mathematics, physics, and other branches of exact study, and instituted a new field of thought which continued to flourish until everything went down in the carnival of war that succeeded.

As to the literature of Rome, we may dismiss it almost with a word. It was in great part imitative, not original. The early Romans were an Aryan people in whom the imagination was but feebly developed. Their incessant wars caused an undue development of the practical turn of thought. Their minds were filled with the results of perception, unillumined by the glamour of fancy, and uncombined by the linking element of logic. Some feeble movements towards the development of a native literature appeared, but they were quickly drowned beneath the flood of Greek thought, which overflowed the land. The drama, the history, the poetry, of Rome were imitations of the Greek, and in many cases were the work of Greek authors. The Roman demanded excitement, not art; sensation, not beauty. Poetry and prose literature of much merit appeared, but it was largely a copy or an imitation. The only originality of the Roman lay in his practicality, and his literature was original only to the extent that it was infused with this element. Law and satire were the two literary inventions of the Romans. These were practical subjects and were treated practically. There was little that could be called artistic, even in their poetry and oratory. They inclined to the florid and sensational, and what merit they displayed was undoubtedly largely due to the incessant study of Greek originals.

In Rome we find no drowsing and dreaming on the shores of a shining sea. All was alert, energetic, direct. The fate of provinces was to be decided, social problems were to be settled, legal questions to be solved. There was no time to dream. The Aryan imagination greatly declined, and was only reawakened by the inciting example of Greek thought. But the art of government made great progress, the science of law almost reached its maturity in the hands of the great Latin jurists, and satire hurled its fiery denunciations against vice with a directness and fierce invective utterly unlike the neat though trenchant sarcasm of the Attic comic muse. Rome was too busy, during much of its history, to be literary. It borrowed and seized on all sides, and replaced invention by rapine.

What is here said may appear to many too strong, and it is true that under the early emperors Rome had an active and prolific literary period, in which works of great value appeared, poetry was diligently cultivated, histories of high merit were produced, philosophy, oratory, and epistolary literature developed, and such names as those of Virgil, Horace, Ovid, Juvenal, Cicero, Cæsar, Livy, Tacitus, and Pliny added to the list of the world's great writers. Yet in style and method the works of most of those authors were imitative rather than original, being but transplantations of the Greek literary ideas to Rome, and they therefore occupy a much smaller place in the history of the evolution of literature than their merit and volume would indicate. Juvenal, with his trenchant satire, Cæsar and Tacitus, with the business-like directness of their historical style, displayed much of the true Roman spirit, but the others drew their inspiration largely from Greece, and in their finest work we can hear an echo of the voice of the Attic muse. This, while it may not detract from their literary value, does from their originality and evolutionary importance, with which alone we are here concerned. We therefore dismiss the literature of Rome with this brief consideration.

Such was the final outcome of the literary work of the great world of ancient times. In this literature was included all the worthy thought of thousands of years of human history. It was mainly devoted to imaginative transcripts of the relations existing between man and the world he inhabited, or the realm of the supersensual above and around him. With this effluence of the imagination was mingled a considerable unfoldment of the literature of perception. But the literature of pure reason made much less progress. Reason was closely allied with imagination in the production of the philosophy of the ancient world. It needed to become completely divorced from imagination before it could give birth to the science of the modern era.

CHAPTER XX.

MODERN LITERARY DEVELOPMENT.

THE literature of the modern world is the thought record of Christendom, and is instinct with the spirit of that later age of Hebrew thought which centres around the noble figure of Christ, and which, while contemporary with the intellectual activity of Greece and Rome, is imbued with a new character and purpose. It possesses much of the emotional energy of the older Scriptures, but adds to it that sentiment of universal charity, of loving sympathy with all mankind, which was in great part wanting to the ancient world, but is the key-note of Christian thought. The utterances of Christ are remarkable for their far-reaching sympathy even more than for their lofty morality. Morality had been greatly developed in preceding ages, so far as the promulgation of ethical maxims was concerned. But unselfish human sympathy, a brotherly love untainted by hope of reward for well-doing, was a new revelation, and formed the inspiring spirit of a new literature which grew abundantly in the succeeding ages.

It is interesting to observe the early development of Christian thought. The philosophical tendency which was at that era active in the world took hold of the simple dogmas of Christ, and wove them into a complex theology in which all the problems of creation were dealt with. Thought was indeed so active that numerous opposing systems of theology arose, and dozens of sects appeared, bitterly hostile to one another on some hair-splitting philosophical fantasy. It was the Greek spirit of metaphysical inquiry dealing with the simple directness of the Christian creed. Fortunately, the inspiring sentiment of that creed survived these disjointed imaginings, and sympathy with mankind remained the inspiring centre of the new theology.

After the fall of Rome and the overflow of civilization by barbarism, an era of almost utter ignorance supervened, which lasted for about five centuries, a period of mental gloom which was very feebly illuminated by the pretense of learning kept alive in the monastic establishments. Thought had returned in a measure to its primitive stage, and the original conditions of literary development were in part reproduced. The German and Scandinavian inhabitants of Northern Europe had possessed from ancient Aryan days the germs of a mythological faith, which the opening of the historic era found greatly developed. This mythology took its tone from the conditions of life and nature. Instead of resembling the light, frolicsome, bright-visaged myth of Greece, it became dark, awe-inspiring, and warlike. The gloom and immensity of the northern forests, the cloudy and stormy skies, the long-enduring wintry frosts, the rude and turbulent life of the inhabitants, are all echoed in their mythology, which gloomed where that of Greece sparkled. It was less disconnected than that of Greece. There was a certain harmony between its parts, and a consecutiveness in its ideas of the supernal world, of the nature of things and the destiny of the gods, which attained the dignity of a philosophy of mythology, a crude and primitive theory of the constitution of the universe.

In Christian Europe, where an ignorance reigned little less dense than that of the pagan north, the natural tendency of the uncultured human mind was displayed in the production of a host of extravagant and superstitious legends, as wild and supernatural as those of mythology. A polytheistic faith came into existence, in which devils and angels replaced the gods of the upper and nether regions. The idea of a single supreme Deity almost vanished, and the worship of the Virgin was in no essential sense distinct from the worship of the maternal deities of Greece. This newly-invented system of faith presents an interesting evidence of the mythological tendency of the Aryan mind, in the growth of polytheistic notions around the dogmas of a simple monotheism, and the transformation of abstract ideas into deific beings. Such were the first movements towards the development of thought in modern Europe. They might have been succeeded by the production of a new literature in the lines of the ancient indigenous literary development, but for a vigorous disturbing force.

In fact there was some growth of a native literature in pagan Europe, possibly much more than we are aware of. Only a few fragments remain, but there is reason to believe that these are the relics of a considerable body of ancient songs, the product of the bards of a vanished age. The most extended work which has come down to us from the pagan period is the stirring Anglo-Saxon poem of *Beowulf,* the epic of barbarian Europe. This poem, with its peculiar diction, its magic, its sword-hewing and ale-drinking, its rude yet bold metaphors, its savage earnestness, and the unselfish courage of its hero, who fears neither man nor monster, portrays to us the days of our pagan forefathers with a picturesque vividness that no sober history could attain. It was probably written after the conversion of the Saxons, but very little of Christianity had as yet got into the wild hearts of the old sea rovers, and its tone is pagan through and through. Two short poems, *The Traveler's Song,* and *Deor's Complaint,* which are probably still more ancient, are supposed to have been written on the continent, before the roving Saxons left their original home for the conquest of England.

Germany also possessed a similar indigenous literature, though none of it has been preserved in its original form. Our first knowledge of it comes from Tacitus, who speaks of ancient songs of the Germans, of a religious character. But the *saga* literature of the north, a series of stirring war ballads, was of later date, though it contains mythological elements which are probably of very ancient origin. At the period of the revival of literature there came into existence a warlike epic of remarkable character, the *Nibelungenlied,* which is thoroughly pagan in its characteristics, though it indicates the influence of ideas derived from the age of chivalry. Critical analysis of this poem shows that, in all probability, it is made up of a series of ancient ballads, clustering around one central hero, and wrought into a single poem by a master hand in the same manner as the Iliad of Homer is supposed to have been produced. These sagas contain both mythological and historical elements. The central hero, Siegfried, is looked upon as a representative of the sun, and his adventures as derived from mythological ideas, while the Huns and Burgundians of the poem are clearly historical characters.

The original ballads of the Nibelung evidently antedated Christianity and chivalry, though in their combined form the thought conditions of the mediæval age appear. The poem as we have it mingles germinal ideas of chivalry with barbarian and savage characteristics indicative of a rude state of society. The heroes win their brides, not by wooing, but by force of arms. The poem is full of war—rude, bloodthirsty, unrelenting. It burns with jealousy, hatred, treachery, revenge, and all the darker passions. It moves with a torrent flow, and possesses a vivid imaginative force and intensity. In it we can perceive the character of the Teutonic intellect, not as yet developed into its philosophical stage, but already filled with a deep sense of the sublime and awful in human destiny, and of the impending force of the overruling powers. It is Germany in its savage era, its wild spirit softened somewhat by the hand of the compiler, yet breaking out at the end into all the ungovernable battle rage of the berserker. Another poem wrought from the same store of barbaric ballads is that of *Gudrun*. This is less terrible than the song of the Nibelung, but is instinct with the same rough vigor, the same fierce loyalty of men and free faithfulness of women, the same barbaric energy and vigorous imagination.

For the literature of pagan Scandinavia we must seek the ice-bound realm of Iceland. In the *Edda* literature of this remote island there has fortunately been preserved in its native form the northern mythology, which gradually disappeared from Europe before the influences of Christianity and the growth of new thoughts and interests. The Icelanders, devoted to peaceful pursuits, little affected by the thought transformations of Europe, and spending the long winters of the frigid zone within the walls of their habitations, faithfully preserved the old thought of the race, and transmitted it to modern times in its archaic form. And here, within the pages of the *Edda,* we can trace the original form of the Siegfried legend, as of others of the ancient sagas, and discover the mythological conceptions which lay behind the human adventures of the Nibelung hero.

This imaginative activity of the Icelanders, with the philosophical character of their mythology, is a significant indication of the general characteristics of the Aryan mind. These appear to have been strongly developed alike under the tropical heats of India and in the sunny land of Greece, in the lofty highlands of Persia and in the frozen homes of Iceland, everywhere blossoming into a rose garden of the imagination, and developing into a richness of philosophic reflection to which the other races of mankind present no worthy parallel. The Aryan mind in all times and regions has manifested a depth and brilliancy of thought which carry it far beyond the more superficial ideas of its sister races, in whom we find little invention and less philosophy.

A similar growth of indigenous literature is seen in another Aryan people, the Celts. In fact a highly important part of the mediæval literature is based on Celtic originals, the work of the bards of Wales. For in this region seem to have originated the celebrated Arthurian legends, which afterwards made their way to the Celtic people of Brittany, and served as the basis of the numerous romances of Arthur and the Round Table Knights, the favorite literature of the Middle Ages. A collection of ancient Welsh tales, the *Mabinogion,* is still extant, and contains the originals of others of the romances of chivalry. Another Celtic people, the inhabitants of Ireland, though little considered by students of literature, possess a large and valuable store of ancient manuscripts. It is well known that the Irish church kept alive the embers of thought in the Dark Ages when they were dying out elsewhere. Possibly under the stimulus of this mental activity, the Irish bards of the same period produced an abundance of poetry, reaching back perhaps to the second century A. D. The manuscripts which we possess date no earlier than the twelfth or thirteenth centuries, but their contents had probably, in many cases, been afloat in memory or written form for many centuries previous. These early works largely consist of historic poems and narratives, stories of fairy lore and mythology, descriptions of voyages and adventures, heroic tales, and other miscellaneous matter, much of which is still extant. Here also is indicated the epic tendency, since the heroic ballads tend to converge around a single legendary hero, as the similar ballads of Germany clustered around Siegfried, and those of Greece around Achilles. Had only the hand of a master welded into one narrative the many ballads relating to the hero *Cúchulaind* which cluster around the story of the war waged by *Queen Medb* for the capture of the mystic brown bull of *Cualnge,* it would have given us an Irish epic of great variety and warlike energy, and of a much more archaic type than the *Nibelungenleid.*

There is another series of ancient ballads called the *Fennian* and relating the adventures of a hero named *Finn,* who remains to-day a popular legendary character with the Irish. These tales are of later date than those of the other series. None of them were probably written before the twelfth century, though the legends they detail may have been much earlier in origin.

More might be said about the indigenous literature of modern Europe, but the illustrations given will suffice to show something of its character and tendency. Its development bore close relations to that of Greece. We perceive first the evolution of an involved mythology, then faint indications of the existence of religious lyrics, then an active era of heroic ballads, which in at least one instance converged into a concrete epic poem—in two instances, if "Beowulf" had a similar origin. The character of these poems also reminds us of those of the Greeks. Man was the central figure in the universe of the Germans and Celts, as he was in that of the Greeks. There is none of the Hindu abasement before the infinite unknown. These sturdy heroes of legend stand erect, and make their good right arms the arbiters of fate. The gods take part in their deeds to a much less extent than with the Greeks. In fact the gods had grown misty and vague in the light of Christian teaching. Magicians, goblins, monsters dire, remained, to be fought with and overcome. There was no bending of the proud human neck before deity or demon in these lordly vikings of the north, who carried their lives in their hands, and their destiny on their sword-blades.

The later steps of development of an indigenous literature were checked, as we have said, by a disturbing force. This was the influence of the ancient learning, which had been kept alive during the earlier period by the church, and which, by the twelfth century, began to make its way strongly among the people. During the eleventh century learning showed marked signs of a revival among churchmen. This was followed by the establishment of universities, and a vigorous movement towards a general revival. The study of the Latin authors was earnestly prosecuted, while from another quarter, the schools of Saracen Spain, the thought of ancient Greece acted upon the European mind.

There is nothing in the history of literature more striking than the sudden and rapid growth of Arabian culture, through which the influence of Greek learning first made its way into modern Europe. But it must be borne in mind that the conquering Arabs were not barbarians in the same sense as were the devastating Germans, Mongols, and Turks. They were, indeed, a people of considerable culture in the days preceding Mohammedanism. Their literary development had attained the stage of the lyric poem long before they emerged from their desert home. For several centuries the lyric had been sedulously cultivated, and numerous tender, impassioned, and highly polished poems were extant, full of oriental hyperbole and extravagance of eulogy. People and rulers received these songs with enthusiastic delight, and the successful poet was often richly rewarded.

The conquests of the Arabians included many of the literary regions of the ancient world. Syria, Egypt, and Persia fell into their hands. Eastward their armies reached India. Westward they subdued Romanized Africa and Spain. There was no annihilation in this conquest. Tribute alone was demanded of unbelievers, who were otherwise allowed to possess their faiths and pursue their vocations unmolested. Thus, when the first rush of the Arabian conquest was over, and the conquerors had settled down in self-surprise at the ease with which they had subdued a world, they found themselves in contact with minds full of the culture of the preceding ages. Greek literature had made its way into all the regions of their conquest. Alexandria was still an important literary centre. The Jews of that day had numerous learned men. There was doubtless much learning throughout Syria and the farther east. Lucian, much the ablest of the later Greek authors, came from the region of ancient Assyria.

The influence of this learning naturally proved strong and immediate on a race accustomed to value literature, full of the ardor of a new religious faith, and mentally aroused by the incidents of a career of successful warfare. The Arabians, on their settlement into peaceful pursuits, were in a state remarkably susceptive to intellectual influences. There was here no mental enervation or obtuseness. They felt and responded to the thought that surrounded them. Literature was encouraged by the courts and welcomed by the people. Its cultivation speedily became a passion, as ardent as had been the passion for proselytism.

But there was a marked difference between this literary growth of the Arabians and that of the earlier nations. Its inspiration was not from nature, but from books. And this inspiring influence was not the whole, but a part only, of the Greek literature. The Arab mind was not a creative one. Its new religious creed had nothing in it of the spontaneous, but was a mosaic painfully wrought by Mohammed out of preceding elements of belief, principally those of the Jewish faith. It was the monotheism of Abraham in a new dress, and pranked out with extravagances invented by the active Arabian fancy. The quick overthrow of the rude and colorless older polytheism of Arabia, and general acceptance of monotheism, are significant of the tendency of the Arabian mind. It inclined to the nomadic character of thought, the sense of a pervading oneness in nature.

The highly imaginative poetry of the Greeks made no appeal to Arabian students. It was out of tone with their fanciful but simplified turn of thought. The practical mind of Aristotle was more in consonance with their perceptive intellect, and his works were selected from the mass of Greek literature as the most worthy subjects of study. The science of the later Greeks was taken up and diligently prosecuted by the Arabian scholars. Medicine, mathematics, astronomy, geography, optics, chemistry, and natural philosophy developed considerably in their hands. History was highly esteemed. The philosophies of Greece were translated, ardently studied, and voluminously paraphrased. The science of grammar was earnestly pursued, copious dictionaries were composed, and cyclopedias published. In fiction the Arabians imitated the wildly fanciful Hindu romancers. In poetry they displayed an intense activity, and produced lyrical effusions in abundance. They failed, however, to reach the higher levels of poetic thought, no epic or dramatic work appears among their voluminous productions, and their lyrics are marked by nimbleness of fancy rather than by depth of thought.

In fact, with all the mental activity of the Arabians they produced little of literary value. In the practical they were at home. But though they possessed an ardent fancy, they lacked the broad mental outreach of a truly imaginative race. They could polish superficial thoughts, but were incapable of grasping deep ones. The philosophy of the Greeks, which was ardently studied by their best minds, gained no important additions at their hands. After centuries of earnest reflection they produced little more than a rehash of Aristotelism. Yet Arabian philosophy, in the works of its greatest professors, Avicenna and Averroes, had a powerful influence upon the subsequent development of the European intellect, to which the ideas of Aristotle were first conveyed in this foreign dress. In like manner the history of the Arabian writers was but a voluminous multiplication of chronicles, immature in character and void of reflection. Their romance was descriptive only, and failed to portray the inner world of the mind. It was chiefly in poetry that they excelled, and lyrical effusions more imaginative and reflective than those of the pre-Islamite days were produced in abundance.

This poetic activity had an important effect alike in the East and the West. To its incitement we may ascribe that remarkable lyrical era of the later Persians which stands almost alone in the history of the oriental world. In the songs of Hafiz and his contemporaries we have again the Aryan intellect, roused to life by the Arabian literary fervor, and bursting into rich and glowing lyric strains which vie with the noblest poetic productions of mankind. Its western influence was similar in character, but exerted upon a people of different mold. For to it we may with some assurance ascribe the lyrical outburst of the troubadours of France and the minnesingers of Germany.

Indeed, the revival of learning in Europe seems to have had several instigating causes, all flowing from the previous literary eras of the world. From the Arabian poets came the instigation to the love lyric of Provence and the north. From their philosophers came the knowledge of the Aristotelian thought, which exerted such a disturbing influence upon European speculation. From their scientists came the incitement to European study. Again, through the monks, there was received a knowledge of the great authors of Rome, and of the institutes of Roman law. Finally, through the church came down the treasures of Hebrew literature, the basis of all spiritualized thought.

These several influences converged to produce, in the twelfth and thirteenth centuries, a remarkable outburst of literary fervor, which succeeded with seeming suddenness to the blankness of the preceding period. Doubtless this preceding period was not so void of culture as it now appears. We have perceived indications of a degree of activity of thought for many centuries before in the heroic songs of the people. The church also had its literature, principally that borrowed from the ancient world. But in the centuries named secular thought blossoms out into a striking diversity and variety of forms, the work of vigorously active minds. Had this literature imitated the more ancient types it would be unnecessary for us to give it much attention. But it was, on the contrary, new and fresh in form. Though the incitement to thought came from without, the forms of thought came from within, and we have here to do with a distinctly new chapter in the history of mental evolution.

One of the most striking products of this literary renaissance was the merry music of the troubadours, which broke so richly forth in the fair and fertile land of Provence. That this sudden gush of song had its instigation in the lyric fervor of Arabian Spain we can not well doubt. It was not the poetry of war, but of love; not of the West, but of the East. It was a love sentiment of exaggerated tone, and full of oriental extravagance. The institution of the fantastical device of the "Courts of Love" was also in consonance with oriental fancy, but not with the brutal conditions then existing among the hard-hitting barbarians of Europe.

A preceding class of wandering bards, the Jongleurs, can be traced as far back as the tenth century. They roamed from court to castle, singing warlike eulogies of their entertainers. Their lays were succeeded by the far different strains of the troubadours, which were first heard in the twelfth century, and continued during that and the succeeding century. The passion of love was the inspiring theme of these ardent ditties. It was the fancy of the poet to choose some fair lady, often far above him in rank, and endlessly harp on the subject of his devotion and her loveliness, with none the less warmth from the fact that his love was usually a mere platonic artifice. The lays of the troubadours soon became the ruling fashion, perhaps through the favor of the fair dames of Provence, who could not but be gracious to the poets who so musically sang their charms; and a spring tide of eddying song ran over the land. It was, indeed, all spring and the songs of birds. In endless varying strains the delights of the springtime were sung; not the spring of the plowing and the sowing, as with Hesiod and Virgil, but the merry season of joyance and the dance, of basking in the sun rays and sporting on the green meads around the castle. The poets were the mere butterflies of life, and their songs the flutter of butterfly wings. These merry carols were sadly devoid of idea and emotion, and held the minimum of thought in the maximum of rhythm. But they were full of ease and gayety, were neatly rounded and polished, and for two centuries bright Provence was alive with joyful lays, the voice of heedless childhood, in which love and laughter precede sober thought.

The spirit of the Provençal poetry soon spread to the colder north, where the voice of Abelard is earliest heard, in ardent lays to his much-loved Heloise. Of these northern lyrists the names of more than three hundred are given in the twelfth and thirteenth centuries. The idea took, as we may say, and the love-strain spread far and wide throughout Christendom. In Germany it called forth the songs of the minnesingers, a swarm of gay lyrists who mainly flourished in the thirteenth century. With them, as with the troubadours, love was the main inspiring theme, and though they had less of the Arabian hyperbolic extravagance than the Provençal poets, they replaced it with an engaging sentiment of innocent and tender affection, while their songs are full of the gayety and frolic exuberance which is the moving charm of the "gay science" of the bards of love.

The sentiment of these poems, natural to the highly cultured Arabians, seems out of tone with what we know of the conditions of European society of that period; but there is no doubt that it had a highly useful effect in giving a new polish to social customs, in softening the characters of the rude barons, in creating a sense of devotion to the fair sex, and in setting in train that amelioration of manners which is best displayed in the institution of chivalry, with its new sentiment of honor and its noble conception of the duty of the strong to defend and protect the weak. Indeed, we find in these amatory ditties, in the extravagant professions of chivalry, in the institution of "courts of love," and other characteristic products of the age, the birth of a new spirit which had no existence in the ancient world. In the far past there was comparatively little expression in literature of the tenderness of love, of the virtue of courtesy to the weaker sex, of the duty of humility, and of the necessity of cultivating the softer emotions of the human soul. The voluminous literature of Greece is almost devoid of the love sentiment in its delicate modern tone. Love there is unbridled passion or cold duty. It has little of tender feeling. In fact, as we have already remarked, the feeling of love, as distinguished from passion, is largely an outgrowth of the Christian dispensation, and first gained prominence through the golden dogmas of Christ's teachings. The old world yields little evidence of the existence of a sense of chivalry, or of devotion to womankind. This came into being in the new world under the influence of the doctrines of the Christian church, and the examples of human sympathy and unselfish devotion displayed by the noblest of the Christian clergy.

The lyric effusiveness of this period did not confine itself to France and Germany. It spread far and wide, through Holland, Italy, Spain, Portugal, England, and Ireland, and varied its subjects from the fervent chants of love to the ringing strains of war. It is not, indeed, an echo of the troubadour music we hear in all these lands. In Spain, for instance, a more warlike muse chronicled the stirring contest between the Moors and the Christians, and sang the deeds of the older heroes of the land. Song here took the ballad form. It became greatly stimulated, probably from the propinquity of the cultured Arabians; and though the great mass of these ballads which are still extant are, in their existing form, mainly of later date, yet they evidently were largely of early origin, and received their inspiration from the long hand-to-hand contest between the nimble Saracens and the hardy heroes of Spain.

In Germany the minnesingers were succeeded by the mastersingers, whose work forms one of the strangest phases in the whole history of literature. Chivalry had come to an end. The nobles were busy in wars, robbery, political schemes, etc. Literature fled from the castle and took refuge in the city, in the workshop of the mechanic and the guild of the artisan. Guilds of poetry were formed, in which shoemakers and blacksmiths replaced the noble singers of the earlier era, and in which poetry was manufactured like so many shoes and loaves, under strict rules and laws which proved deadly to the delicate spirit of the muse. These ardent but uncultivated verse-makers hammered out an extraordinary quantity of verse; but hammered out of it almost every shred of poetry. Of them all Hans Sachs alone has gained a place in the ranks of the world's nobility of literature.

Side by side with this exuberance of lyric song was an equally vigorous literature of another character, and one more in consonance with the spirit of the age. This was the metrical romance, or *Chanson de Geste*, the long, rhymed, often tedious epic story of chivalry, full of the legendary and the impossible, and appealing to the taste of readers of that day as strongly as the developed novel does to modern readers. These romances made their way to every region into which civilization extended, and were ardently welcomed in every corner of the Christian world. So far as we are aware, they had their origin in Norman France, and were the work of the Trouvères, the poets of that turbulent northern realm, so different in its conditions from the peaceful realm of Provence.

We can but very briefly glance at the immense mass of literature of this character which satisfied the craving of our forefathers for fictitious narrative, and which continued for centuries the delight of Europe, however insufferably tedious the best of these *Chansons de Geste* might seem to our more critical and exacting taste. So far as existing evidence goes, the metrical romance made its first appearance in the eleventh century.

Its period extended to the fourteenth century. The subjects treated were various, but, in the early days of the romance, mainly concerned themselves with the mythical adventures of Charlemagne and his knights. Some of these poems were very lengthy, containing in certain cases as many as thirty thousand lines, and were full of wild and impossible adventures, magical incidents, doughty deeds of heroes, loves of heroines, schemes of traitors, rescue of the oppressed, punishment of the guilty, and final triumph of the brave and bold. The earlier chanson had little chivalry in it. Its tone was rude and brutal, and the courtesy and clemency of the later knight failed to appear. The age of chivalry was as yet in its infancy.

About a century later than the earliest of these chansons a new series of romances, of milder and more chivalrous tone, came into existence. These centred around a gentler hero, King Arthur, with his noble circle of Round Table Knights. The Arthurian legends were of Celtic birth, as we have said, and made their way eastward through the "History of the Britons" of Geoffrey of Monmouth, a rhymed chronicle of the legendary history of Britain, which was greatly added to by its translators, Wace and Layamon. Into this reservoir of legend the trouvères dipped deeply, inventing a voluminous series of fictions, full of chivalrous sentiment and of amorous devotion to the fair, and devoid of the brutality of their predecessors. These romantic epics also displayed more fertility in invention, superior fullness of incident and description, and greater variety in characterization, than the chansons. Hence their far greater popularity. Arthur and his knights are still heroes of romance, while the ruder tales of Charlemagne and his paladins have sunk into oblivion.

These romances, composed by the trouvères, were recited by the jongleurs, who carried them from castle to castle in their memories, and chanted the long and involved stories in the castle hall to a circle of entranced and delighted hearers. We may imagine the interest with which the bookless barons and their retainers, yawning away in their gloomy castle halls the dreary intervals between wild hunts and warlike raids, must have beheld the approach of one of these jongleurs, the lineal descendant of the bard or minstrel of an earlier date, his memory stored with some new legend of the popular heroes of fiction. The inveterate novel reader of the present day, with his utter absorption in plot, and intense sympathy with fictitious tales of life, probably but repeats the castle audience of old, absorbed in the wild and stirring adventures and magical incidents of the romance, and following the involved fiction of the narrator with an interest that was almost a realization, and a trust that was little short of belief. The supernatural was still the possible, the world beyond the limits of a kingdom was nearly an unknown universe, and the most extraordinary series of adventures, if only somewhat removed in time and space, could have no lack of believers, and of attempted imitators. Undoubtedly the chivalrous sentiment of the Arthurian romance must have done much towards rendering real chivalry more than a poetic fiction, and have strongly aided to bring gentleness, courtesy, clemency, honor, and devotion into fashion, and to remodel the world upon a new and nobler pattern.

The romance did not confine itself to the heroes mentioned. Many other heroes were devised, and more than one of the great men of the classical past became the subjects of mediæval chansons. Alexander the Great in particular was thus dealt with, and grew into a hero only second in interest to Charlemagne and Arthur. He was knighted, he had his peers, he gave tournaments, he encountered fairies, he experienced magical adventures, and became extraordinarily unlike the real Alexander of history.

The romances here described, with others of later date in which prose succeeded the verse of the earlier writers, served to amuse Christendom for centuries. Apparently originating in France, they spread over Germany, Italy, and England, in all of which countries French was the language of the court. They were abundantly imitated in these and all other civilized European nations, and filled the place of the modern novel in the Middle Ages.

In addition to these longer tales a great abundance of short fictitious narratives came into existence, under the general name of *Fabliaux,* which word is made to include much that has no relation to the true fable. These versified tales relate to incidents of human life, usually of a comic character, and frequently satirical. Their moral is unimportant in contrast with the story, and though some approach the eastern fable, others come nearer to the modern tale. They became exceedingly numerous, and served as reservoirs of plot and incident for later tale-makers. Chaucer and Boccaccio both drew freely from them. In fact the light fictitious narrative was probably very abundant in the period mentioned in all the realms of Christian Europe, and much of the literature of a later age drew its plots from this inexhaustible store.

One other striking monument of this ruder age of literature must here be referred to—the satirical poem of *Reynard the Fox,* perhaps the most popular production of the mediæval age. There has been much dispute as to the period and the country of this noted poem, in which the satirical element of the fabliaux is carried to its extreme. Most probably some of its stories are of very ancient origin, and represent the folk-lore of barbaric Germany, while the complete poem is the work of a series of poets extending over several centuries, each devising some of its multitude of amusing incidents. It is the poem of the lower classes, as contrasted with the romance of the nobles. It satirizes in the form of fable all the evils of the times, and bitterly indicates the wrongs of the people and the oppressions of their lordly masters. It was the outlet of the popular voice, and offered a channel for the sly and often cutting allusions to the corruptions and political evils of the day. Its vast popularity is, therefore, not surprising. The French poems which are still extant on the subject amount to nearly 100,000 lines, the work of several generations of humorous poets.

In the later portions of *Reynard the Fox* there appear certain indications of a literary tendency which was soon to grow into great importance, and to exert a vigorous influence over subsequent literature. This was the tendency to allegory, one of the most striking and strongly-marked characteristics of the later mediæval literature. Instead of personified animals we have personified qualities. Reynard, the tricky fox, becomes *Renardie,* or unbridled hypocrisy. The remaining characters also tend to become abstractions. But the true originator of the reign of allegory was William de Lorris, the author of the celebrated *Roman de la Rose.* Though allegory was by no means unknown, nothing so elaborate in this vein had previously been imagined, and the popularity of this work shows that it exactly hit the taste of the period. Tedious as it appears to us, it appealed strongly to the cultivated minds of that era, whose readers were growing weary of the simple marvels and grotesque extravagances of the romances of chivalry. It indicates an important step forward in the development of modern literature.

The "Romance of the Rose" is at once a love poem and a satire, though its manner is entirely allegorical. The fanciful work of Lorris was continued by Jean de Meung, who made the story a vehicle for the display of a varied erudition. His poem is full of the spirit of the later centuries of the Middle Ages. Chivalry, mysticism, the mediæval habits of thought, the ruling problems of society and of philosophy, are all there, hidden under the veil of allegory, which permits the handling of many subjects no writer would have dared to deal with openly.

The long-continued popularity of this poem set a fashion which greatly affected the later course of literature. An immense volume of allegorical poetry came into existence, and for several centuries continued in vogue. Of its more important results we may briefly speak. Chaucer, the great English poet of the Middle Ages, made the translation of the "Romance of the Rose" into English verse his first extended work. Many of his original poems, as "The Court of Love," "The House of Fame," "The Book of the Duchess," etc., are full of allegorical fancy, and not until the period of his latest and greatest work, "The Canterbury Tales," did he emancipate himself from its influence. Of the remaining important works in this vein three only need be mentioned, "Piers Plowman's Vision," "The Faerie Queene," of Edmund Spenser, and "The Pilgrim's Progress" of John Bunyan, each as completely allegorical as its mediæval exemplar, though utterly different from it and from the others in style and character.

In Italy the close of the period here considered was signalized by the appearance of a most remarkable poem, full of the influence of the reviving classical literature, yet thoroughly mediæval in spirit. This was the "Divine Comedy," the noble epic of Dante, which broke like a sudden sunrise upon the twilight gloom of the preceding period. This grand work stands alone in the history of literature. It is the theology of the Middle Ages put into verse, the epic of the Christian mythology. It deals with the superstitions current in Christendom, as Homer dealt with the myths of early Greece, and gives a visible form to these vague, floating conceptions such as only the mind of a genius could have devised. As Hesiod, in his *Theogony*, gave definite shape to the theological conceptions of a far past, so did Dante give distinct embodiment to the "Reign of Terror" of the Christian religion, and he has left in his great work an imperishable record of thought conditions which can never have a survival upon the earth, but which formed one of the natural phases of the evolution of religious dogma.

Little need here be said in regard to the more ordinary forms of prose literature of the mediæval period, since they have no separate significance in the development of thought. The growth of history, from the bald annals of the early chroniclers to the more picturesque details of Villehardouin and Froissart, and the political shrewdness of Comines and Machiavelli, has no features specifically distinct from those of the development of historical literature in antiquity. So with the various collections of prose fiction, of which the noted one of Boccaccio is alone of special importance. To the crude fabliaux and floating tales of the past, many of them derived from Hindu originals, which had made their way down through Saracen and other channels, this brilliant writer gave a new grace and charm, and put life into the dry bones of the more ancient fiction. His celebrated collection of tales is the seed wheat from which has slowly evolved the modern novel, as the modern romance similarly grew out of the romance of chivalry. Chaucer's "Canterbury Tales" formed one of the first fruits of Boccaccio's "Decameron," from which it borrowed its form and part of its material, though it gave to these a new life and spirit. In its vivacity and ease of expression, its humor, its graphic characterization, its grace and versatility, the "Canterbury Tales" has no parallel in its era. It is the step taken from the middle to the modern age of literature. Chaucer's earlier works had been strictly mediæval in spirit and texture. This work outgrew mediævalism, and stands as the beginning of a new era of thought and style, which was to culminate two centuries later in the noble character conceptions of Shakespeare.

A similar step forward from mediævalism was made by another great poet of the period—Francis Petrarch, in whose rich odes we have the culmination of the sentiment of the troubadour lyrics, and the opening of a new era of poetic feeling. Though, like the bards of Provence, he sang the story of his love and his lady's beauty, he replaced their fantastic and artificial sentiment with a real love, living in the poet's heart, and filling his verse with true feeling in place of unreal sentimentality. Nor does he deal with simple conceits and superficial fancies, but he makes of love a philosophy, delves deeply into the mine of inner thought, and renders the deepest feelings with a tender delicacy which brings him far within the threshold of the modern world. Though in the age of Dante mediævalism was still in full life, in the age of Chaucer, Petrarch, and Boccaccio it had reached its vanishing point in literature, and in the works of these authors the ebbing tide of mediæval thought turns into the flowing stream of the coming renaissance.

Of the other literary labors of the period in question some attention might be given to the active study of Roman law pursued in the law schools of Bologna and other cities. But much more important in a literary point of view was the unfoldment of the scholastic philosophy, that extraordinary system of splitting nothing into its right and left sides which exhausted the acumen of the learned men of the universities for several centuries. No more complete waste of pure thought was ever accomplished than in these earnest but empty arguments, and in a certain sense the world stood still while the learned doctors tossed their inflated bladders of philosophy back and forth. Certainly civilization would have advanced more rapidly but for this sheer waste of mental energy. The dispute between nominalism and realism, the settlement of the momentous question whether or not universal ideas are real entities or mere names, was adorned with profuse logic. A knowledge of the system of Aristotle, acquired from the Arabians, had set the ball rolling, and it was not allowed to come to rest for centuries. One of the chief objects of the schoolmen was to prove by logic the principles of theology. But, unfortunately for them, there were two obstacles in their way. One of these was their lack of comprehension of Aristotle, of whom they had only incorrect translations. They were working with tools whose character and use they did not understand. The second obstacle was the church. The dangerous charge of heresy was ready for any bold thinker who dared step outside the beaten track. Under these circumstances, as may be imagined, the schoolmen narrowed the range of their inquiries, and attempted to settle such vital questions as the nature of angels, the morning and evening states of the angelic understanding, and similar enigmas. In these useless disquisitions many acute minds lost themselves, among them being such noted personages as Anselm, Abelard, Peter Lombard, Albertus Magnus, Thomas Aquinas, Duns Scotus, and Ockham. Despite the unquestioned ability of these men, which might have done some noble work if exercised on more solid material, the labors of the chief universities of Europe, for three or four hundred years, were rendered almost absolutely fruitless by a false habit of thought, and the domain of philosophy was unadorned by a single new truth. Great tomes were produced full of subtile reasoning, difficult to understand, and barren when understood. Many of these are still extant, Dead Seas of thought, "full of sound and fury, signifying nothing." Yet the labors of the schoolmen were not altogether without effect. They at least quickened the human intellect and brought logic into repute. The time was sure to come when it would be exercised on more profitable material.

There are some curious and interesting features in the revival of literature above described which warrant the length at which we have reviewed it. This literature was not indigenous in any full sense. But neither was it a direct continuation of ancient thought. It was intermediate in position between these two extremes, and became peculiar and varied from the multiplicity of influences acting upon it. There were no strictly contemporary pagan influences. Christianity had so permeated society as to abolish the form, if not quite the substance, of paganism in Europe. But the old gods had avenged themselves by paganizing Christian theology, and the spirit of the older polytheism was intact in the beliefs of the people and to some extent in the literature of the church. The struggling thought of Europe was full of ideas of supernatural agencies derived from the pagan past. It was full of the growing spirit of chivalry, an outgrowth of the Christian present. It was full of an adventurous spirit which was displaying itself in the Crusades. It was full of religious enthusiasm, warlike spirit, dread of the unknown, hatred of oppression, a courage often fanatical, and a sentiment of honor that was almost fanaticism. Mingled with all these were at once the brutality of barbarism, and a courtly polish that would have adorned high civilization; obtuse and superstitious ignorance, and active thought; dread of magic and witchcraft, and an eager desire to probe the secrets of the universe.

In no preceding period had the conditions of thought and society been so complex. And upon minds thus constituted flowed the current of ancient thought through strange channels. Hebrew and Latin thought came down through the church, and gained many new features in the descent. Greek thought came down partly through the Arabian writers, partly through the influence of the scholars of Constantinople. Through the same channels came the influence of more distant literatures, the Hindu, the Persian, the thought of Western Asia. The combination of these varied influences yielded a complexly constituted literature, displaying new and strange forms, and conditions unlike anything that had existed in the ancient world.

By the period of Dante, Petrarch, and Chaucer ancient learning was becoming more widely and correctly diffused. Dante was well acquainted with the Latin authors. Petrarch and Boccaccio were learned men, ardent students of both the Greek and Latin classics, and did much to rescue the ancient literature from destruction. The works of these authors showed a revival of the graceful and polished diction of the great writers of Greece and Rome, but they were in no sense servile imitations of the classics. The age was too full of vitality, too earnest and energetic, to be fed on viands baked for another age and people. It demanded to be addressed in its own thoughts and language, and the originality and merit of the authors named sprung from their mirroring the age in which they lived, and giving vital expression to the real thoughts that stirred in the hearts of the people, instead of producing soulless copies of ancient originals.

There is another form of literature, the drama, which is a natural outgrowth of developing civilization, and which had a period of indigenous growth in mediæval Europe, though this native evolution was checked, in several regions, by the influence of the classical drama. The line of development of the mediæval drama was peculiar, and quite unlike that traversed by the Greek stage. It began in the church, where, in the Dark Ages, Latin plays were performed, classic in form, but with the legends of Christian saints for their subjects. There seems also to have been kept alive some shadow of the Roman mimes, in the *joculatories* of the Dark Ages, which extended down to the times of the jongleurs, of whom the more humble indulged in pantomimic and other tricks.

Doubtless these practices, transmitted from ancient times, influenced the birth of the modern drama, yet it assumed a form, and grew up under conditions, having little relation to those of the past. It had its real source in the religious service of the church. At a very early period it became customary to illustrate the church service by living tableaux representing sacred scenes, and by descriptive songs. By the tenth century this custom had expanded into an early form of the *mystery*, the scriptural stories being illustrated by extended representations during festival services. By the twelfth century short texts began to be written for the *mysteries,* and in time a rude dramatic action grew up around the picturesque service of the church.

To the *mysteries,* which dealt with scriptural subjects only, were soon added the *miracles,* which dealt with subjects derived from the legends of the saints. As these plays grew longer and more diversified in incident they began to be given outside the church, and in the vulgar tongue. The *miracles* especially were thus played before public audiences, and soon in a manner in accordance with secular taste. Into the saintly representations the devil and his subordinates entered as popular characters, the buffoons of the play. The comic element thus introduced struck the public fancy, and the religious sentiment of the play became in time subordinate to its spirit of fun and burlesque incident.

The tendency to allegory, which at that period was so strongly manifested, entered into the drama also, and a new series of plays came into existence in which allegory ruled supreme. These were the *moralities,* or moral plays, which grew strangely popular, considering the abstract character of their myths. The persons of the earlier drama were replaced by personified qualities, goodness, honor, sin, fraud, justice, and a host of such allegorical representations. The devil remained, however, with his attendant the vice, and continued to be the popular element of the play, being the comic trickster of the drama, and the butt of all the virtuous abstractions of the performance.

For several centuries these rude performances satisfied the taste of the European public, while the drama slowly emancipated itself from the control of the church, and grew more and more secular in subject and character. This secularization advanced most rapidly in France, where the guilds and other associations first made dramatic performances a feature of their festivals. To the forms of the drama mentioned was added that of the *sotties*, short, comic allegorical performances, whose popularity induced the authors of *mysteries* and *moralities* to introduce into their plays comic scenes from existing life, and in time to confine themselves to secular subjects. Real characters slowly crept in among these allegorical figures, and eventually crowded them out, and the modern drama was born. The first play extant which thus deals with real personages only is "Maistre Pierre Patelin," acted in Paris in 1480. Slight as it is in plot, it may fairly claim the honor of being the true progenitor of the modern drama.

In England, the transition to the regular drama took place in the same manner, real figures gradually shouldering out the abstractions of the earlier stage, until, in the middle of the sixteenth century, the *interludes* of John Heywood entirely dispensed with allegory, and adopted the French manner of writing farces with real characters. The moralities held their ground, however, for some time longer, the regular comedy only slowly making its way against the strange taste for allegorical abstractions which is the most singular feature of mediæval thought.

Such were the steps of growth of an indigenous drama in Europe. Before they could progress to their legitimate conclusion a vigorous disturbing influence was introduced, in the revival of classical learning, and the study of the masterpieces of the Greek and Roman stage. The growth of the drama was greatly hastened by this revival, but it was also warped, particularly in Italy and France. Only in England and Spain was this disturbing influence resisted, and a natural evolution continued, hastened, but not seriously diverted, by the classical influence.

It is not necessary here to follow the further steps of its progress. In Italy and France the national form of the drama was laid aside, and a new form adopted, in strict accordance with the classical models. This Greek dress has given a rigidity and artificiality to the subsequent drama of these countries in strong contrast to the plasticity of the English drama, into which the current of mediævalism directly flowed. The modern English play began, about the middle of the sixteenth century, in rollicking comedies and extravagant tragedies, many of them classical in theme, and some of them direct imitations of classical authors, yet original in treatment, and appealing directly to the tastes of rude audiences, not to those of a courtly assembly versed in the learning of the past, as was the case in France.

The Spanish drama, in like manner, diverged from the classical form, in response to the demand of uncultured audiences. In the hands of Lope de Vega, the most fertile, and among the greatest, of dramatic geniuses, it took on a genuine national form, in which the abstractions of the older Morality disappeared. It became peculiarly the drama of intrigue, the comedy of "cloak and sword," in which gallantry is the main theme, and a highly complicated but well-managed intrigue the ruling feature. There are other forms of the Spanish drama: the heroic, which deals with national heroes, and the religious, devoted to the purposes of the church festivals; but the "comedies of cloak and sword" continue the favorite form of the Spanish drama, and the exceedingly numerous plays of this popular cast constitute a deep mine of plot and intrigue which has yielded abundant material to the dramatic authors of other countries.

The modern drama, thus fairly launched, rapidly progressed towards its culmination, and during the century succeeding that of its birth gained an extraordinary development. This, the seventeenth century, includes the great names of Corneille, Racine, and Molière in France; of Cervantes, Lope de Vega, and Calderon in Spain; of Jonson, Beaumont, Fletcher, and others in England; and particularly of Shakespeare, the greatest dramatic genius the world has known. In fact the English people displayed a particularly active dramatic ability, and within a half century after the appearance of the first comedy, with all its rudeness and crudity, Shakespeare was fairly at work, producing plays without a parallel in dramatic literature.

Little more need be said about the development of the drama. In Italy and Germany it reached its acme at a much later date than in the other countries named. Alfieri, the greatest Italian tragedian, flourished but a century ago, though Ariosto, the great Italian poet of the sixteenth century, produced the earliest of modern European comedies. The unfoldment, in late years, of the Italian spoken drama, has been greatly affected by a new and thoroughly modern form of dramatic composition, the opera, which is perhaps better suited to the southern taste than any other form of the art, and which has yielded some remarkable works within the past century. In Germany the drama developed later than in any other modern nation, and culminated only in the last half of the eighteenth century, in the great works of Schiller and Goethe.

This hasty review of the development of the modern drama needs to be followed by a similar consideration of another element of modern literature, the novel. It is the true successor of the ancient epic, which in it is reduced from poetry to prose, and brought down from the concerns of the gods to the daily lives of men. The old supernaturalism has become the modern naturalism, the old elevation of thought the modern familiarity of tone. The epic poem belongs to the dawning days of civilization. It is the final outcome of a prehistoric age of ballad literature, and the oldest and most natural epics are but compounds of older ballads. Numerous epics have been written within the age of culture, but seldom with striking success, so far as popular appreciation is concerned. Culture takes interest mainly in human affairs, and demands a strictly mundane literature. In the Middle Ages, as we have seen, the epic manner descended to the level of the romance of chivalry. At a later date it came down still more from the heroic stage, while the tale of every-day life rose into prominence, the short narratives of the fabliaux being succeeded by the rounded and polished stories of Boccaccio and Chaucer. Only for the strong influence of the drama, into which flowed the best imaginative thought of the subsequent age, the novel proper might have quickly followed this double movement of fiction towards naturalism.

The taste of the past centuries, however, was far from ready for the character novel, with its repression of the extravagant and the supernatural, and its replacement of the machinery of romance by the passion, sentiment, and feeling of actual human life. Taste needed to pass through a series of gradual changes, and to become refined and cultivated, before fictitious reproductions of real life could become more agreeable than the exciting, though impossible story of romance.

Yet, the very late date in the history of literature in which the character novel came into existence may seem strange when we consider the extreme popularity to which this form of fiction has attained, and the accompanying decline of interest in poetical literature, which once held its own against all competitors. There are satisfactory reasons for this, however. The period of the supremacy of poetical narrative was the period of general ignorance. Only the learned few possessed the art of reading. Literature was listened to, not read. And the influence of the reciting minstrels was added to by the charm of rhetoric and the music of metre, often by the intonation of song and the accompaniment of the harp or lyre. Fiction and song were combined. The lyric of love or of eulogy, and the stirring ballad of war, were the favorite literary forms. From the latter came the epic and the metrical romance. From the fable came the rhymed fabliau, and the tale of real life. Even history took on the form of poetry, and rhymed chronicles, replete with exciting fiction, formed part of the recited literature of the castle and the court.

At a later period a new form of literature, the drama, in which recitation was combined with representation, came into existence, and grew so rapidly in popular favor as to banish the metrical romance from existence. The sudden and supreme influence of the drama, which we have already noted in Greece, was repeated in modern Europe, and the desire of the public for fictitious narrative was largely satisfied by the life-like representations on the stage.

Against these vigorous influences prose fiction made its way but slowly. There were few readers in those days, and though the educated class was steadily on the increase, its desire for fictitious narrative was mainly satisfied by the drama. In France and Spain the rise of prose fiction can be more definitely traced than in England, in which country it was more opposed by the vigor of dramatic and poetical composition. In Spain the nonsensical extravagance of the prose romance of chivalry, which had become out of all accord with the character of the age, was brought to a sudden end by the burlesque romance of Cervantes, the immortal "Don Quixote de la Mancha," whose liveliness and truth of characterization gave it an extraordinary popularity. In Italy Pulci, at an earlier date, issued his burlesque poem of "Morgante Maggiore," whose ridicule was directed against the same object. Yet in Italy the metrical romance gained some warrant for its existence, in giving origin to the great poem of Ariosto, the "Orlando Furioso," in which the literary method of the Middle Ages culminates in a work which may be classed among the great productions of the human intellect.

Meanwhile the art of prose fiction was making steady progress. In one direction we can trace it through the long line of the oriental fable, which slowly made its way from Hindustan, through Persia and Arabia, to modern Europe, where it appeared in the form of the *Kalilah U Damnah,* an Arabic version of the Indian fables of Bidpai, and of the "Seven Wise Masters," of the same supposed origin. To these may be added a compilation of oriental tales known as the *Bahar Danush,* or "Garden of Knowledge." These antique stories, received through Greek, Latin, and Arabic versions, gave plots to many of the fabliaux, and also to the tales of the "Gesta Romanorum," a fourteenth century collection from which the later Italian authors borrowed freely. Boccaccio made much use of these prior stories in his "Decameron." He was succeeded in the same vein by many other Italian writers. At a later date similar collections of short tales appeared in France, the best known being the "Cent Nouvelles Nouvelles," and the "Heptameron." Spain also became very active in the production of this sort of minor fiction.

But the novel proper grew up mainly from other sources, particularly from the romance of chivalry and the love romance of later Greece. During the decadence of Greek literature many such romances appeared. The first writer in this vein seems to have been Clearchus, a pupil of Aristotle, who gave the cue to a series of fictions which continued till the twelfth century of the Christian era. Of these romances a few may be named. The first which we possess in full is the "Theagenes and Chariclea" of Heliodorus, a bishop of Tricca of the fifth century. This is an intricately arranged love story, devoid of the supernatural, but full of extraordinary adventures. Two others deserve mention from their particular interest in this connection, the "Daphnis and Chloe" of Longus, the earliest and best of the pastoral romances; and the "Barlaam and Josaphat" of St. John of Damascus, a pious Syrian monk of the eighth century, whose work forms the original of the so-called spiritual romances. The latter of these is as full of ridiculous monkish conceptions as the former is of incredible rural incidents.

The monks of the Middle Ages did not yield the whole field of fiction to secular writers. The *Fabliaux* were opposed by a series of *Contes Devots,* or religious tales, which are, strangely enough, often as licentious as their scoffing rivals. The romances of chivalry were also imitated in religious tales, in which spirituality and knight-errantry, magic and devotion, are intimately mingled. These were succeeded by less extravagant romances, in the vein of "Barlaam and Josaphat," of which we may name the "Lycidas and Cleorithe," written in 1529.

In the same era began a reign of comic romance, ushered in by the extraordinary satire of Rabelais, a work of extravagant burlesque without a parallel in literature. There followed the Italian "Life of Bertoldo," and a series of Spanish romances, with thieves for heroes and the lower levels of life for their field. The final outcome of this vein of fiction was the well-known "Gil Blas" of Le Sage. Side by side with this comic fiction appeared the political romance, of which the "Utopia" of Sir Thomas More and the "Telemachus" of Fénélon are the best known examples.

During the same era there grew up a taste for the pastoral romance, instigated perhaps by the "Daphnis and Chloe" of Longus, though the loves of shepherds and shepherdesses were not absent from Middle Age literature. Many works appeared in this style of composition, of which the most notable are the "Diana" of Montemayor, the "Astree" of D'Urfé, and the "Arcadia" of Sidney. These works in their day were exceedingly popular, though they appear to us insufferably tedious, from their inflated style, long-drawn descriptions, and lack of living interest. In connection with these may be mentioned the "Euphues" of John Lyly, a work of the most ridiculous affectation of language, yet which became so popular as to form the model of the stilted court language of the Elizabethan period.

The various forms of fiction here enumerated were succeeded by the heroic romance, the delight of the French court during the first half of the seventeenth century, though now among the least read of the literature of the past. These long-winded romances appear to have had a double source. The Greek romance of "Theagenes and Chariclea" had been translated in 1547, and was much read, while in the same era a new series of romances of chivalry became popular. The "Amadis of Gaul" was followed by stories of the lives of this hero's descendants to the fourth or fifth generation. It was against these prolix narratives of magic and knight-errantry that Cervantes launched his "Don Quixote." They suffered a sudden death before the trenchant lance of the lean Knight of La Mancha, but their prolixity, though not their magic, reappeared in the heroic romance of the succeeding century. Love, from being the secondary, had now become the primary element of the romance. It replaced the desire for glory in moving the heroes to deeds of valor. We can trace this growth of the love sentiment towards supremacy throughout the whole range of fictitious literature, until it culminates in the modern novel.

The heroic romance was mainly the work of three authors. Its best known examples are the "Polexandre" of Gomberville, the "Cleopatra" and the "Cassandra" of Calprenede, and the "Clélie" and the "Grand Cyrus" of Mademoiselle de Scudery. These are interminably long and insufferably tedious narratives of the deeds and loves of ancient heroes, each of whom wanders wearily through thousands of printed pages. In them the incessant adventure of the earlier romances is replaced by a plentiful padding of moralizing and long-drawn description, which seems to have hit the fancy of the age, for it is the vice also of the "Arcadia," the "Euphues," and others of their kind, yet which would be decidedly unsuited to the taste of this age of brisk fancy and changeful desire.

The reaction against this school of romance yielded an active growth of more vitalized literature in France. One favorite form of prose was the fairy tale, the work of Perrault, Madame d'Aulnoy, and others, many of whose productions, such as "Bluebeard" and "The Sleeping Beauty," are still popular. The picaroon, or low life romances of Spain gave the cue to the "Roman Comique" of Scarron, and the "Gil Blas" of Le Sage, which latter, in its attention to character drawing, closely approaches the novel proper. Another work of great literary importance is the "Princess of Cleves" of Madame La Fayette. This production stands as the turning-point between the romance and the novel. In it we get rid of the prolixity and the antique heroes of the "Polexandre" and its kindred, and come to an era of contemporary life, in which the sentiment of love is warmly delineated, and forms the moving impulse of the story. There is also some attempt at character drawing, and the path seems laid open to the true novel.

In England, during the same age, prose fiction was less active. The reign of Charles II. was marked by the appearance of romances in the heroic vein, some of them full of affected language, though in a vein distinct from that of the "Euphues." Fiction of a lighter sort appeared in the works of Mrs. Behn and Mrs. Heyward, in which were reproduced the intrigue and licentiousness of the drama of that day. These were succeeded by the remarkable fiction of De Foe, and the grotesque satire, "Gulliver's Travels," which perhaps was suggested by a prior series of French satirical travels.

The varied productions here named led directly towards the true novel, some of whose features appear in all the forms of romance and minor fiction described, but which first came into actual existence on

English soil in Richardson's "Pamela," quickly succeeded by Fielding's inimitable "Tom Jones," with its acute character drawing, its lively description, its keen criticism of social conditions, and its vivid painting of actual life. In France the new idea was quickly grasped by the Abbé Prévost, whose "Manon Lescaut" was the first true character novel in that realm of active fiction. The sudden and great popularity of these works shows that the public taste was fully prepared for them. Romantic circumstance and improbable adventure had too long occupied the field of fictitious literature, and the unreal had for many centuries crowded the actual from the printed page. This era vanished with the appearance of the first work in which the real life of man became the field of labor of the writer of fiction, in which the inner world began to replace the outer, and the movements of impulse, sentiment, and emotion succeeded magic and chance as the motor machinery of the world of imaginative literature.

We cannot attempt to follow the history of the novel in its voluminous expansion. It will suffice to say that the older romance passed out of existence before it, and that even the drama has failed to hold its own. In these days of general education the book has succeeded to the voice of the minstrel and the jongleur, and the novel is sweeping all other forms of imaginative thought into its capacious net. It has become affiliated with the romance, and with the tale of marvel and adventure, on which it has impressed its ruling requirement of truth to actual life. It has included within its scope satire, humor, philosophy, morality, and almost every other form of thought. It has assumed the rhetorical, though not the metrical forms of poetry. In short, it has become the great *olla podrida* of literature, the sweep-net which has gathered in every description of imaginative prose.

But the development of the novel in itself, as distinguished from these accessory literary elements, presents certain features of high interest, to which some closer consideration may profitably be given. In its unfoldment, from its earliest to its existing form, it has passed through phases of evolution which bear an interesting relation to the whole mental evolution of mankind. In the development of all literature, indeed, one steady line of movement is discernible: an involution, in which the outer world slowly vanishes from view, and the inner world of the mind takes form and substance before the observing eyes of man. Literature began with a consideration of the relations of man to the supernatural. It continued with a consideration of his physical relations to his fellows and to visible nature. It progressed into a review of his mental relations to outer things and to other minds. Finally it developed into a critical analysis of mental conditions, in which the deepest sources of thought and emotion were probed.

In the development of the novel we can trace the stages of this involution. It began with descriptions of the external relations of society, and the romance of common life. In time the intellectual and emotional relations of society grew more prominent. The detail of what had happened became replaced by the detail of what was thought. The warfare of the soul took the place of the strife of the body. The mind was analyzed, and its movements keenly delineated, in all its dealings with the problems of social relations, of love, hope, and destiny. This was an unworked field, full of mysteries to be discovered and truths to be revealed. Though the world were at peace outside, and life seemingly humdrum and uninteresting, the soul might be at war within, and rife with interest and excitement. Here was a new kingdom of romance and adventure to be traversed, a realm full of marvels, splendors, strifes, conquests, and defeats. It is this kingdom of the soul which is rapidly becoming the field of action of the modern novel. Mental analysis is taking the place of physical perception, and the pen of the novelist has entered a realm of illimitable breadth; for the mind of man contains within itself the infinite possibilities of a universe.

Such is the level to which imaginative literature has advanced, in poetry and prose alike. Crude eyesight pictures of life are no longer sufficient for the cultured taste. The intellect of authors and readers has grown vigorously critical and analytic, and the souls of men are being depicted, in all their beauty and all their deformity, upon the printed page. We are growing beyond the era of outer stir and strife, of wild adventure and physical desire. We are entering an era of inner stir and strife, of emotional adventure and desire. The mind of man is growing wonderfully active and intricate. The possibilities of its development are unlimited. Its emotions, its variety of conceptions, its affiliations with other minds, its abnormal conditions, its thirst for the true and beautiful, its sensitiveness, its boldness of thought, its shrinking weakness, all its conditions and relations, are deepening and expanding. And this is the field of labor of the most advanced modern novelists. The outer world is worked out. The threshold of the inner world has just been crossed. In its depths lie the promise and potency of a new universe of literature.

The mental involution, thus shown in the history of fiction, is apparent in the other chief forms of imaginative literature, and has left its impress upon all forms. It is particularly marked in poetry, which has grown strictly lyrical and reflective, and in which deep analysis of thought and emotion, and metaphors drawn from the kingdom of the mind, have replaced descriptions of outer occurrences and superficial feelings, and metaphors drawn from the visible world. A comparison of one of the masterpieces of Greek poetry with one of the spiritually analytic modern lyrics will illustrate the breadth of this development more clearly than can be done in any brief description.

As for the remaining forms of ordinary literature, history and biography, satire, criticism, philosophy and theology, travel, description, etc., similar indications of development are apparent. History has passed from its annalistic to its philosophical stage, and from the bare delineation of the deeds of kings to a close survey of the conditions of peoples. Satire has made every foible of society and every false phase of thought its game, and has played an important part in its bold handling of themes which sober criticism dared not touch. Kings have been made to writhe upon their thrones by stings of ridicule which they could neither destroy nor avoid. The evils of the mediæval church were freely exposed by the satirist where the daring critic would have perished at the stake. Rabelais, in his immortal work, laughed the vices of the clergy to scorn. They writhed beneath the blow, but the bold satirist was safe from their revenge, for all Europe was laughing with him. In our day satire has softened into criticism, which seeks at once to point out beauties and faults, but differs from true satire in that it pours no vinegar into the wounds it makes, and laughs not at the weaknesses it exposes.

Philosophy, in the modern world, has mined much further into the mysteries of the unseen than did the thoughts of Grecian sages. It has probed the physical and mental relations of the universe deeply in search of some definite law of existence, or principle of correlation of thoughts and things. With all its earnest effort, however, it can hardly be said that it has attained any more positive results than did the much revolving scholasticism of the Middle Ages.

There is one phase of modern literature of which a closer consideration seems necessary, the scientific. As science, however, will be treated in a chapter by itself, little need be said here. In the history of literature it is extraordinary to how great an extent the perceptive and imaginative faculties of the mind have been exercised, to how slight an extent the logical. The great bulk of the more ancient literature of every people is imaginative in character, and mainly poetical in form. At a later date the literature of perception came actively into vogue, history, biography, description, etc., vying with fiction. The reasoning faculty, in its earlier phases, dealt mainly with imaginary concepts, and yielded baseless philosophies. It was late before it began to deal with facts, and yield science. At present the scientific mode of thought has become vigorously active, exactness of observation and logical treatment of every subject are demanded, and poetry alone, which in its nature forms the antithesis of science, has escaped from its grasp. The world has dwelt for ages in the eras of perception and imagination, its days of childhood and youth. It is but now entering its age of reason, and developing into the full manhood of the intellect.

The development of literature has been constantly opposed by one influence, to which some allusion seems here desirable. This is the influence of old and famous authors upon writers of a later generation. This has been particularly active during periods of literary decline, and has done much to aid the decadence of thought. In such periods authority proved fatal to originality, men worshipping and imitating the old masters of thought instead of opening up new fields of intellectual labor. Criticism and commentary, imitation and plagiarism banished literary merit, and literature lost its freshness and became untrue to nature and the existing conditions of society. We can see the influence of this worship of the "old masters" of thought in later Greece, and particularly in Alexandria, whose scholars were in great measure echoes of the famous writers of the preceding centuries. We can see its influence in Rome, whose literature was in great measure plagiarism and imitation of that of Greece, this great empire furnishing the world with very little of the new wine of thought. It has been strongly manifested in India, where the priesthood chain their intellect to the sacred Vedic text, and where the influence of the ancient works rules supreme over modern thought. It is strongly displayed to-day in China, where the authority of the classic texts has checked the development of the intellect, and holds the mind of the people in close captivity to the thought of a long-past age. It existed in Middle Age Europe, where the Greek and Roman classics gained a preponderating influence. It is displayed, in a diminishing measure, in the Europe of to-day, and particularly in the world of the university, in which the authority of the Greek authors is still dominant, and many students spend the best years of their lives in acquiring a supernumerary instrument of expression, and in bringing their minds into close rapport with the thought conditions of a vanished age. A better devised method of unfitting students for the world into which they are born, and adapting them mentally to a state of society and condition of thought which can never return, could not well be imagined. Fortunately its influence is dying out and the fact is being recognized that we have a rich and ripe world of thought around us, of tenfold more importance to modern man than the noblest work of the noblest days of the past.

Despite this long-continued tyranny of classic lore the thought conditions of the ancient world have had but a minor effect upon the character of modern literature. They aided to give it vitality and form, but proved incapable of warping it from its natural line of development. Modern nations have been subjected to new influences, and infused with new strands of thought.

The conditions ruling in every ancient society were simple. Those controlling modern society are highly complex and variable. Each ancient literature was the product of a single city or people, in a long-continued state of fixation. Modern literature arose as the outcome of a medley of all ancient thought, flung into the cauldron of a turbulent and seething society, in which fashions, modes, political conditions, industrial and social habits rapidly varied, the old quickly growing obsolete, and the new coming on in successive waves of change.

And modern literature has in it the elements of originality through an important influence which scarcely existed of old. Thought needs to be energized by preceding thought. It must stand on a foundation of the mentality of the past if it would reach a higher level. But it should gain energy and depth only, not inspiration, from the past. True inspiration is founded only on the existing conditions of nature and society, and thence all originality flows. The mind that works on old thought as its material is apt to become but an echo of that old thought. But the literature of the past was much better calculated than modern literature to accept this subserviency. The one trusted to ideas for authority, the other is based upon facts. Style was dominant in classic thought; matter is now more esteemed than manner. Modern thought appeals constantly to observation, and resists the control of authoritative dictation. Thus an important cause of the originality of modern literature is that it is essentially scientific in method. The habit of constant appeal to nature has grown until it has become a ruling principle. The imaginative work of our day is strongly affected by this scientific habit, and has a physical rather than an ideal basis, while the thought of the world is kept abreast the world's life, instead of being suffered to lag behind, and stagnate in the thought conditions of a dead past. The old masters are still of value as the guides, but they are no longer suffered to be the tyrants of the intellect.

Greek literature had the inspiration of a religious faith in which the earthly was deified. It reaches nowhere into the unseen, for all its universe is within its grasp. It is true and harmonious because nature is true and harmonious; but its scope is narrow, its outreach limited, its insight contracted. Modern literature has long lacked the artistic harmony and delicate finish of the Greek, because it has been struggling with the difficulties of a new element, hardly known to the Greeks. Aspiration is the inspiring spirit of the best modern thought. In it we perceive the upreaching lines of the Gothic cathedral rather than the artistic finish of the Greek temple. With the Greek the world was completed and definitely rounded off. With modern man it is but the threshold to a vaster world, a sense of whose impending nearness has given a new life and character to our finer products of thought. Our mental universe is not closed above, as was that of the Greeks, but stands widely open and reveals the illimitable to man's spiritual vision.

Particularly in the Germanic race is this spirituality evident. The Christianity of Southern Europe has always been a religion of ceremonial and authority.

That of Northern Europe has become a religion of reflection and spiritual insight, in which every soul is its own high priest and reposes faith only in its own ideal of the Deity. This difference is reflected in the literatures of the two sections. The one is ardent, passionate and superficial; the other cool, reflective and introspective; the one has in it the sparkle of southern suns, the other the sobriety and depth of the winter glooms and gray skies of the north.

In the English mind these two elements are mingled and fused, the clear practicality of the south combining with the deep introspection of the north. The practical turn of English thought is perhaps largely due to the active commercial habits of English life, which have toned down in it the Teutonic tendency to metaphysical speculation until English literature has assumed an intermediate position between those of the two opposed regions named. It is reflective, but not to the extent of the German. It is practical, but not superficial. It mingles deep reflection with acute observation, and has thus become the most evenly tempered of all modern instruments of thought. Keen observation, deep love of nature, close study of man, philosopical idealism, the southern lightness and sparkle and the northern depth and earnestness, the ardor of the Aryan imagination tempered by the critical shrewdness of a business-like mind—such are the characteristics of English thought, and in its complete scope it presents a striking variety of character and style, the result of the highly varied influences which meet in the character of the English people.

What the literature of the United States may become in the future it is too soon to predict, but its outlook is promising from the argument just advanced in respect to English literature. For the mingling of races and influences in England, which has certainly had much to do with the composite character of its thought creations, is being greatly surpassed in the United States. In this republic of the west every variety of physical constitution and natural condition exists, while there is an extraordinary rapidity of intermovement and diffusion of thought among the population. This population is a compound of all civilized, and many uncivilized races. Hither flow immigrants from all quarters of the earth, and thought influences from all regions and all periods of the past. Thus the American people is becoming a physical and mental epitome of the civilized world, a meeting place of all character and all thought, and is likely to be in the future the least specialized of all nations, containing, like the germ of a new being, influences flowing from every organ of the great body of mankind.

If isolation promotes one-sidedness in thought, such a complex combination should certainly produce freshness and breadth in literature. American literature already shows a tendency to break loose from conservative leaning upon authoritative standards of thought, and a disposition to explore new fields and devise new methods of intellectual expression. The indications are that the future movement of the American mind will not be in narrow or special lines, but that it will flow in that healthy mid-channel of thought which has ever been the true course of intellectual development.

CHAPTER XXI.

THE DEVELOPMENT OF THE FINE ARTS.

THE word Art, in its fullest sense, includes every product of the imaginative or constructive faculty, whether physical or mental. It is not usually given so broad a meaning, yet these products are too closely related to admit of their separation into distinct classes. The constructive process, however, admits of a natural division into two separate categories, known respectively as the common arts and the fine arts. These may be briefly defined. The common arts are those whose purpose is to benefit mankind—to add to the sum of human comfort. The fine arts are those whose purpose is to please mankind—to add to the sum of human entertainment. Or, more precisely, we might say that it is the object of the common arts to conduce to the physical enjoyment, that of the fine arts to conduce to the intellectual enjoyment of mankind. In this sense the common arts include all the mechanical processes, the fine arts all the ornamental processes. In the category of the latter may be included specifically the arts of sculpture, painting and music. Architecture is also ordinarily included, and justly, so far as it endeavors to excite the wonder or admiration of mankind. So far, however, as it is intended to promote man's physical comfort it belongs to the category of the common arts. The mental components of the fine arts are poetry, and fiction of every description. They are, indeed, ordinarily restricted to poetry, yet this restriction does not seem a proper one, since poetry and fiction alike have the one purpose in view, that of promoting the intellectual enjoyment of mankind.

In a less complete sense another distinction might be made between the common and the fine arts. The former are devoted mainly to the production of new forms, the latter to the imitation of existing forms. This distinction, it is true, only partly holds, yet it is becoming more marked with the development of art. It is the main object of the inventive artisan to produce something unlike any previous thing, to add to the breadth of human possessions by creating new conditions or combinations of material calculated to promote man's comfort. It is the main object of the artist to produce something marked by beauty, grace and harmony of proportions, and thus calculated to develop the tastes and appeal to the intellect of mankind. In the latter effort a slavish adherence to the imitation of existing forms is not necessary, and wide divergences from imitation have been made in the desire to produce something grander and more striking than the ordinary works of nature. But these attempts, as a rule, have resulted in the production of monstrosities, calculated, perhaps, to excite wonder or awe in the ignorant, yet grotesque and debased to the eye of cultivated man. It is now generally recognized that man can add nothing to the beauty and grandeur of nature. In harmony of color and richness of combination, in grace of form and depth of expression, instances surpassing man's creative power exist abundantly around us. In the delicacy of the minute and the sublimity of the great nature also goes beyond man's powers. The gradual recognition of this fact has made art more and more imitative. This is particularly the case in the arts of sculpture and painting, in which a faithful rendition of nature as it exists, with efforts to catch its fleeting expressions and reproduce its spiritual significance, are esteemed the true duties of the artist; it being evident that he cannot go beyond nature in these respects, and produce a form and expression more admirable than that of man or a landscape with features of beauty superior to those of the manifold landscapes of the earth.

In the fine arts of literature a similar movement towards imitation declares itself. Fiction and poetry, in their early forms, attempted to transcend ordinary life, and dealt largely with the magical and the supernatural, yielding results more grotesque than admirable. Later in the history of literature the myth and the fairy tale became supplanted by the romance, and the epic song of the gods by the lyric song of man. Fiction still, however, hovered on the boundaries of the impossible, dealing in descriptions of human feats beyond the range of ordinary human powers. These efforts to transcend nature are now acknowledged failures, and have become replaced by a close imitation of nature. The excellence of modern fiction depends upon its faithfulness in the representation of actual human life, and in the exactness of its descriptions of natural scenes. It has become strictly imitative in its highest achievements, yet with a strongly declared purpose to reproduce the ideal significance and intellectual relations of life, rather than its physical conditions and external relations. Poetry likewise is endeavoring to yield a faithful rendition of the emotional relations of the human intellect, and of the higher analogies of nature and correspondences of mind and matter. Yet the poetic art is, to a marked extent, creative. It is producing new combinations of thought without counterpart in previous experience, and is seeking to extend the domain of idealism to an ever higher level. Poetry, indeed, stands in the forefront of thought and reaches out widely into the unknown. As man's mind is the loftiest production of nature, so the poet, in extending the ideal grasp of the mind, is building upwards towards the infinite, and adding to the height where others are adding to the breadth of intellectual development.

The remaining fine arts resemble poetry in their divergence from imitation. The arts of architecture and design deal in recombination rather than imitation. As poetry is a mentally creative, they are physically creative processes. They are based on the forms and curves of nature, but arrange these in new forms and curves, with the result of producing combinations unlike and often surpassing in grace and harmony those existing in the world around us. They are in this sense creative, since they produce forms before unknown in nature. The same may be said of music, which is in a still higher sense creative. Architecture and design, though they vary from the actual conditions of nature, but little transcend them. Music remarkably transcends them. In the higher achievements of the musical artist, combinations of sound and tone are produced far beyond anything pre-existing in the physical world, and attaining a spiritual height of expression which has no parallel in the voices of external nature.

This brief examination of the general characteristics of the fine arts leads, therefore, to the following conclusions: The arts of sculpture and painting, which certainly do not stand at a low level in the category, reach their highest unfoldment in a strict imitation of existing forms and conditions. The arts of architecture and design, of poetry and music, transcend nature, the last named to a remarkable extent, and yield results not only unlike any previously existing, but superior in that they appeal to a higher level of the intellectual faculties of man. Why is there this difference in the apparent value of results, in arts which certainly are not greatly unlike in the real value of their achievements? The cause of the distinction is an evident one. It is simply this, that nature has not in all directions reached the same level of excellence, so that man is able to assist her development in some directions much more than in others. Sculpture deals with nature at its loftiest height of unfoldment, the human form, and has found it impossible to improve upon this noblest work of physical evolution. Painting in like manner concerns itself with the human form, and with the beauty, grandeur and infinite variety of physical nature, upon which no human efforts can improve. Fictitious literature deals with the excessively varied details of human life and thought, to which man can add nothing of a higher scope. He can but produce new combinations of existing life conditions, as the designer produces new compounds of the geometrical outlines of nature. His work, while not a bare imitation, owes its chief value to its close conformity to life as it exists.

The other arts spoken of deal with nature in her less developed conditions, and thus are enabled to advance beyond her level. The art of design does this to a slight extent, by producing combinations of lines of an intricacy, regularity, and harmony not paralleled in any single natural form. The art of architecture surpasses nature more decidedly. All the devices it employs may have natural counterparts; the column, the dome, the arch, the spire, etc., may be imitations of the forms of forest and rock; but the architect divests them of their irregularity of outline and rudeness of combination, arranges them in new and harmonious relations, and produces compounds of forms and materials far more pleasing than the architectural achievements of unassisted nature. Thus he distinctly assists the development of nature, not by the production of something absolutely new, but by refining the crude architectural forms naturally produced, and attaining results of greater harmony and attractiveness. He takes nature at the level which it had gained of itself and lifts it to a higher level.

Music makes a much more extended advance in this direction, from the fact that it deals with nature in one of her least developed conditions. Sound in the physical world is crude and monotonous, lacking sweetness of tone and harmony of combination. In the animal world, particularly in the songs of the birds, it possesses sweetness of tone, and is combined into simple melodies, but not into complex melodies and intricate harmonies. In the human voice it displays a great variety of intonation, and often considerable sweetness and melodious succession of tones. Such is the material with which the musical artist has had to deal, and from which he has produced such marvelous results. Instruments have been invented which yield musical sounds of the greatest variety of tone, and the modifications of pitch have been combined into diversified melodies, wonderfully rich and intricate as compared with the simple melodies of nature. These again have been compounded into harmonies which are almost pure creations, since they are nearly without counterpart in nature. In the production of these, voices and instruments mingle and combine so richly, intricately, and harmoniously, and with so skilful a union of melodious variations of sound into the highest harmonies of tone, that nature's unaided efforts are wonderfully surpassed, and only the most highly cultivated human taste is capable of appreciating these noble creations of the intellect. Thus it is that art assists in the development of nature, imitating it where it has already reached a high level, bringing it forward where its level of attainment is low, and building as it were a new universe in which every element of the twin worlds of matter and mind stand at an equal height, and move together harmoniously in the upward path of physical and mental development.

With this preliminary consideration of the philosophy of the arts in general, we may proceed to consider the development of the fine arts. As concerns their origin, it belongs to such an exceedingly remote period in human history that it is impossible to give it an approximate date. It has recently been discovered that man has existed upon the earth very much longer than had previously been imagined, and that he was an inhabitant of Europe when that continent was in a condition remarkably unlike its present state. It was then chilled by huge glaciers, which covered a large section of its surface, and was tenanted by animals which have ages ago vanished from its plains. Among these was that huge elephant named the mammoth, some of whose latest individuals have been found preserved in the ice cliffs of Siberia. The reindeer also, now a native of the Arctic zone, was then abundant on the ice-chilled soil of France and Italy. It was with these pristine beings that the primeval artists dealt. Representations of them have been found, carved and drawn with considerable skill, on substances taken from their own bodies. In certain caves in the district of Perigord, in central France, numerous art works of this kind have recently been discovered. These consist of carvings of the reindeer and other forms in bone and ivory, and of drawings on bone and stone, apparently made with sharp flints. The drawings include the reindeer, ox, horse, fish, flowers, and rude attempts at the human form. But the most interesting of them is the sketch of a mammoth, executed with much skill on a plate of ivory, which was found in the Madeline Cave, on the river Vezére. This is of particular interest, since it incontestably proves that the eyes of the primitive artist gazed upon that long-since vanished animal while it still roamed the earth.

These interesting early efforts at sculpture and drawing stand alone in the primitive era, so far as discovery has gone. For a long period afterwards the labors of the artist were confined to the production of articles of personal adornment, and the giving of ornamental forms to weapons and other implements. The progress of improvement in these particulars was probably very gradual. It may be traced through the long ages of rough and of polished stone implements, and far down into the era of bronze implements, bringing us to the beginning of the historic period. In the age of bronze art made a considerable advance, as is evidenced in the beautiful swords and other weapons and the articles of personal ornament so frequently discovered. Even in the later part of the new stone age elaborately finished implements, cups, vases, etc., were produced, showing the growing progress of artistic taste and skill.

With the discovery of iron and its general use in the arts the historic era was fully inaugurated, though a considerable period of civilized history had been included in the age of bronze, to which some particular attention is here demanded. In fact the civilizations of the American Indians were entirely included within the bronze age, iron first becoming known in the new world in the swords and armor of the Spanish conquerors. In considering the artistic development of these American Indians we have no concern with the extraordinary works in stone cutting and quarrying which they performed with the aid of hardened bronze. This belongs to the history of their industrial progress, which was considerable. In the field of the fine arts their progress was not great, and may be briefly outlined. The unknown race by whose hands the huge mounds of the Mississippi valley were erected, possessed marked skill in the carving of stone. Among their relics are numerous highly polished stone pipes, which imitate the figures of birds and animals, often with much spirit and truth to nature. Rude paintings and bas-relief sculptures on the rocks also exist, while there have been found very singular earth mounds, often of great extent, in rude imitation of animal forms. Among the most remarkable of these is the figure of a serpent, apparently swallowing an egg-shaped body, which extends its huge curves to the length of seven hundred feet along an Ohio ridge. Most of the other forms are too rude to render it very clear what animals were intended to be figured.

But American art reached its highest stage in the civilizations of Mexico and Peru, in which regions a marked skill and boldness were attained. The artists of these civilizations were particularly skilful in the working of gold and silver, in which they produced delicately-carved vessels, sometimes of great size, and also close imitations of fruits and other natural objects. In the neatly executed animal figures of the Mexican artists the feathers of birds and the scales of fishes were in some cases imitated in alternate layers of gold and silver. Their feather work was also exquisitely performed, the richly colored feathers of humming and other brilliant tropical birds being pasted on cotton cloth with an artistic combination of iridescent hues.

But a great development of manual dexterity and skill in the production of articles of ornament is so widespread upon the earth, and found among so many tribes in a low state of intellectual progress, that it cannot be taken as evidence of any considerable artistic unfoldment, even in a phase as advanced as that displayed by the Mexicans and Peruvians. For true progress in the fine arts we must look to achievements in painting, sculpture and architecture, and here we find them at a low level. Mechanical skill they abundantly possessed, but their artistic taste had not greatly developed. In architecture their boldness was remarkable. Stones of immense size were carved, transported, lifted, and built into walls with surprising skill. This was particularly the case in Peru, where some enormous structures still remain. But the skill displayed was mechanical, not artistic, and hugeness was its principal element of merit. Of the Mexican structures nothing remains but certain extensive pyramids which, it is probable, were crowned with simple and inconspicuous edifices. In Central America, however, the reverse was the case. There the pyramidal bases were reduced in altitude, while upon them were erected enormous buildings in which American architecture attained its most artistic development. These buildings are usually of one story in height, though occasionally of two or more. Their fronts are ordinarily of stone, and are often profusely ornamented with elaborately carved figures and ornaments which are more valuable as evidences of mechanical skill than of artistic taste. Yet, though as works of architecture these buildings are simple and crude in design, their richly ornate cornices and façades, the varied mosaic patterns occasionally wrought in their walls, and their sculpturesque decorations lift them far above the ordinary monuments of barbaric architecture.

The sculpture of the new world is, as a rule, remarkable for size rather than for beauty. Abundant works were produced, both in bas-relief and isolated, so numerous, indeed, that the foundations of the great square in the city of Mexico are said to be entirely composed of them. In an artistic sense, however, their merit is low. The larger works are huge monoliths covered with elaborate carvings, a head in the centre being surrounded by groups of figures in relief. The best productions in the field of art are certain stucco bas-reliefs in Central American buildings, some of those at Palenque having a freedom of manner and symmetry of proportion not unworthy of the earlier Greek artists. Waldeck pictures one, now unfortunately destroyed, in which his drawing gives some degree of warrant for his remark that it was "worthy to be compared with the most beautiful works of the age of Augustus." The art of painting made no important progress in America. It was mainly devoted to hieroglyphic writing, its purpose being utility rather than art.

This American art had nothing to do with the general history of art development. It stood apart in a world of its own, uninfluenced by Eastern art, and died a violent death ere it had progressed beyond its early stages of unfoldment. It was a side issue, dying at the level which the art of the Eastern world attained at a remote epoch.

In some of the Eastern nations, indeed, art made no greater progress than in the American civilizations. This is particularly the case with China, whose isolation kept it apart from the art influences of other nations, while the marked lack of imagination in the Chinese people acted as a serious detriment to artistic development. In consequence, the art of China to-day is in no sense beyond that attained by other nations ages ago. It is marked by grotesqueness rather than harmony and beauty, and by a curious effort to avoid uniformity and a delight in irregularity which stands decidedly in the way of any actual art progress. There is abundant fertility of resource and power of imitation, and a highly developed manual skill, but the true artistic sense is almost wholly wanting. In consequence China is to-day in the infancy of art. Its architecture is simple and devoid of artistic merit. In painting the simplest rules of perspective are unknown. In coloring there is much brilliancy but no beauty of combination. Chinese art, indeed, is marked by a combination of great license in form with uniformity in coloring. Sculpture on a large scale is unknown except in the images of Buddha, an importation of foreign art. In manual skill, however, the progress of China has been very great. In the manufacture of porcelain, in particular, the greatest ability is shown. But it is ability without art. In this respect Japan, though also at a low level, is in advance of China, surpassing it in beauty of design and faithful imitation of nature, and in general artistic taste.

Before we review the art work of the more advanced nations, it will be desirable to consider the general characteristics of and the influences affecting and tending to aid or hinder the development of art. From what we have already stated, it would appear that, as a rule, the shaping of implements into graceful forms, and the production of articles of personal ornament, preceded any of the higher art processes. A marked instance of this was the adornment of pottery, which in all parts of the world has been one of the most general fields for the exercise of artistic taste. The ease of such adornment was doubtless the cause of its universality. The flexible clay could be shaped into graceful forms and covered with ornamental designs far more easily than stone, bone, metal, or the like hard materials. In consequence, the rudest pottery anywhere found displays some effort at ornament, while the progress of art has been more regular and persistent in the manufacture of ceramic ware than in any of its other fields of labor.

Another of the indications of the early days of art is the devotion to work of a small character. Manufacture dealt with the small before it attempted the large, and art dealt long with minor products before it advanced to bolder and more ambitious efforts. In Peru and Mexico, as we have seen, there was great progress in the production of small, life-like representations of nature, while the efforts at larger works remained rude and inartistic. In fact, in the production of meritorious art works on a large scale difficulties are encountered which but slightly affect the production of minor works, and to overcome which a much more advanced state of art development is required.

We should therefore look for a natural unfoldment of art from the small to the large, the artist growing more ambitious as he successfully overcame minor difficulties, until finally he was encouraged to attempt art works on a life scale. But the truth is the reverse of this; human ambition moved in a different channel, and instead of feeling his way from the small to the large, the artist leaped, almost at a bound, from the minute to the huge. In the very midst of progress in the minor arts we suddenly meet with enormous works, indicating an extraordinary boldness of conception and remarkable mechanical skill in execution. These works are mainly architectural, the branch of art which most readily admitted of a rapid progress in size and grandeur. Yet these ambitious architectural efforts had a highly important influence upon the arts of sculpture and painting. Sculpture, indeed, almost began its existence as an aid in the adornment of architecture, and naturally kept pace with it in its rapid unfoldment. The same, in a measure, may be said of painting. Beginning, perhaps, with the tracing of hieroglyphic inscriptions or symbolic designs on the walls of buildings, these arts progressed to colored representations on a scale more in accordance with the dimensions of the edifice. Such pictures were in many cases marked in outline with the chisel, and a flat bas-relief was produced by cutting away the face of the surrounding wall. Figures of this character, colored to render them more conspicuous, exist in the Egyptian edifices. Their production naturally led to round relief, and perhaps eventually to works of isolated sculpture. Of this, however, we have no direct evidence, and it is equally possible that sculpture may have originated independently. Yet in its huger forms we have some warrant for the theory that it began as an element of architecture, from which it gradually emancipated itself.

As to the steps of progress of architecture from its minor to its greater works, few landmarks remain. The intermediate stages probably dealt in perishable materials, and the first great buildings of stone may have been counterparts of similiar buildings in wood, every trace of which has long since vanished. There is much warrant for this idea in the fact that some of the early stone buildings, now extant, seem to be imitations of wooden originals. The stone column entered early into architecture, probably from the preceding use of wooden pillars. This fact is strikingly indicated in the brick temples of Chaldea, as investigated by Loftus. The ornamentation of these consists, in part, of semi-circular projections, placed side by side, and bearing so striking a resemblance to upright trunks of trees when similarly arranged, that the explorer could not avoid the belief that they were but imitations of the latter.

This tendency to hugeness, so strikingly declared in architecture, and which perhaps indicates an ambition in powerful monarchs to excite the wonder of contemporaries and of posterity, and in devout nations to honor their gods, was accompanied by other equally marked characteristics of early art. These arose from the fact that art, in its first advanced stages, was intimately connected with religion, and employed very largely in the adornment of religious edifices. The awakened imagination of mankind, and its long devotion to the supernatural, which we have seen so strikingly displayed in the history of literature, had a marked influence upon art also. The strong desire to produce images of the gods, as indicated in the whole early progress of religion, formed a fertile field for the primitive artist, who used his best endeavors to represent the deific beings in sculptured figures. The imitation of man in these images would have been unsatisfactory. It was the object of the artists to produce a representation of something superior to man, something sublime, vast, awe-inspiring, or terrible, and calculated to awaken the reverence, the admiration, or the fear of worshippers. It was in this direction that the artistic imagination labored, and doubtless with the desired effect, upon ignorant populations, who worshipped their idols as images of the gods, though to us they are rude, grotesque, often ridiculous, and often simply horrible. The prevalence of animal worship rendered the figures of animals, and particularly the combination of animal forms with human faces, or of human forms with animal heads, a very usual device of the idol-makers. Both of these expedients were adopted in Egypt, and the several gods became symbolized in art by the heads of the animals with which their worship was specially associated.

Art having reached this stage of unfoldment, through its association with religion, and the effort of the imagination to represent or symbolize the gods, it stopped there, and suffered a long check to its development. When some conventionalized form was adopted as a representative of a certain deity, this form grew consecrated, and it was considered sacrilegious to deviate from it in any particular. In Egypt especially the development of art was long hindered by this priestly interdict, and it declined in merit from an early period in the history of the nation to the era of the fall of the Egyptian hierarchy. Elsewhere a similar, though a less persistent, effort of the priesthood checked the progress of art, and bound it for many centuries in the iron fetters of superstition. It progressed in Assyria, where this influence had least force, more vigorously than elsewhere, though even there its development was slow. A natural consequence of this energetic spirit of repression was that the fine arts failed to keep pace with the general development of the human intellect, and remained in decadence while civilization was in other directions slowly but steadily advancing. The strong fetters of authority restrained the movement of the mind in some lines of progress, while it was permitted freely to advance in others. An inequality of development resulted. The imagination of man unfolded, his reason developed, political progress went on, industrial skill improved, commerce arose and flourished, the human mind as a whole rose to a decidedly higher level; yet in one of its most important fields of exercise it stood still, being held back by the strong hand of an organized and conservative priesthood.

A natural, yet highly interesting consequence followed. When, in the course of time, nations appeared among whom superstition and priestcraft had lost their power, a remarkable progress in art took place. The mind seemed in haste to recover its lost ground, and to some extent in literature, but most decidedly in the fine arts, the intellect of man leaped to a level in accordance with the height of its general development. Such at least may be offered as a theoretical explanation of the remarkably rapid literary and artistic progress of Greece, the first of the ancient nations to break the bonds of priestly domination, and emerge into the broad field of secular thought. The unchained mind of man revenged itself for its long imprisonment, and sprang at a bound to an advanced position of intellectual development, thought unfolded its wings with magical rapidity, and art attained a height which, in certain directions, it has never since gone beyond. It was the culmination of the purely imaginative development of the human mind, and in the physical sense of artistic value its productions will perhaps never be surpassed.

In the development of architecture, as above said, greatness of dimensions presents itself as the first expedient adopted to excite the admiration and wonder of mankind. The display of power was the artist's earliest conception of merit and sublimity. Great edifices, testifying to this phase of mental development, are found in many regions of the earth. We have already spoken of those discovered in America. In the old world they exist of the same character and proportions, the earth heaps of the mound builders and the massive stone walls of Peru being abundantly paralleled. The sun circles of Peru are far surpassed by the huge monolithic circle of Stonehenge. The vast walls of the Peruvian fortresses have their counterpart in the Cyclopean walls found in Greece, Syria, and elsewhere, and are surpassed in the weight of the stones used by the enormous masses in the walls of the temple of the sun at Baalbek. How these immense blocks were quarried, moved, and erected, at the remote period of their production, must ever remain one of the mysteries of the ancient world, and in this respect the pristine artists have fully achieved their purpose, if it was to excite the admiration and wonder of future ages. But even when art had progressed considerably beyond this crude expedient, and fairly begun to unfold itself in its true fields of grace, harmony, and variety, the effort at immensity still continued. Such enormous productions as the Egyptian pyramids belong to a primitive and barbarous era of art, and represent a survival from an earlier stage rather than a fair example of the true development of Egyptian art at that period. The obelisk, also, represents in a graceful and finished form the ruder monolith of an earlier era. But when the Egyptians ceased to build pyramids, and manifested their true artistic power in their temples, the old wish to excite wonder by hugeness kept pace with the new desire to awaken admiration by variety and harmony of proportion, and the highly wrought and graceful columns of this noble architecture were monoliths of unsurpassed weight and dimensions. A like survival of the archaic desire to arouse admiration by massive dimensions may be traced in many other regions. It is not our purpose, however, to describe the various examples of this early phase of architectural art. Its later developments now call for attention.

Egyptian art, like the Egyptian civilization generally, is remarkable from the fact that, unlike the art of other nations, it seems to have had no infancy. It dawns upon us nearly full grown at a period so remote that it has long remained the despair of chronology. Much has been said about the "great Asian mystery," the utter loss of all facts connected with the origin of Egyptian art. It remains a mystery still, and may ever so remain. All we know is that at a period perhaps antedating that of all others of the great works of man, there arose under the hands of the inhabitants of the Nile valley a group of huge stone pyramids, the greatest of which is the most enormous of all existing works of human art. At that remote epoch the mechanical skill of the Egyptians had, in some respects, reached its highest point. In the power of cutting and polishing stone, in the carving of the hieroglyphics and the art of coloring, they had already gained a skill which they never surpassed, while the art of sculpture had attained a development from which it afterwards declined throughout Egyptian history.

Yet though boldness of conception and mechanical skill had thus early reached so high a level, the art of architecture was destined to take many steps in advance. The building of the pyramids, indeed, was soon followed by the erection of temples, and in the earliest of these the column appeared, as an essential feature of the edifice. In tombs of probably contemporary date the excavated column or pier exists, as a support to the roof. In these tombs we also find abundant examples of Egyptian drawing and painting, which admirably illustrate the life and industries of the age, though they are very crude as works of art.

These early works of the Egyptian artists were followed by a rapid development of artistic skill. How rapid, indeed, it is not easy to say, for the centuries crowd together in the long perspective of Egyptian history, and a period which in later times might seem almost an age appears but a point in that far remote era. In the development of the column, the great feature of Egyptian architecture, Wilkinson considers that he can trace the steps of progress from the plain square pier into the elaborately carved and ornamented column of the completed style. He supposes the square was in time cut into an octagonal, and then into a sixteen-sided pillar, with fluted sides and a square stone for capital. The summit of the column, if painted with the flower of the lotus, and then cut away in intaglio, would yield the lotus capital, while the various other forms of capital and column may have arisen from similar efforts at ornament. However that be, it is certain that the Egyptian artists developed with considerable rapidity in artistic taste, and some of their columns are unsurpassed in beauty and richness of ornament. There is nothing more elegant in architecture than the bell-shaped capitals of the loftiest columns in the great temple of Karnac.

There is one feature of interest and importance in all this early architecture—the tendency to the pyramidal form. It is the distinctive characteristic, as we have seen, of the American architecture. In Egypt architecture began with the pyramid, and the huge temples afterwards erected display, in their sloping sides, the influence of the pyramidal idea. A similar tendency is observable in Hindu architecture, and in the many-storied temples of Babylonia. Indeed, the study of primeval architecture yields the idea that two natural models, the tree and the mountain, acted as controlling influences. The latter suggested the pyramid, the former the column, and from the combination of the two emerged the grand works of Egypt, the noblest productions of early art. To this add the ornaments of bell and palm and Isis-head in the capitals, the fluting of the columns, the simple grace of the entablatures, and the ornamental features of facade and interior, and we have a combination remarkable for grandeur, simplicity, and beauty. The Egyptian temple, however, is not high art. It is heavy and crude in many particulars, and the effort to create astonishment by pure weight controlled these ancient architects to the partial exclusion of the higher qualities of grace and harmony of proportion.

In fact it is probable that after the art of architecture had reached a certain degree of unfoldment, its further progress was checked by the influence of the priesthood, who laid their fettering hand on the spirit of the artist, and strictly forbade deviation from the accepted models of temple and tomb. This restrictive influence of priestcraft was particularly marked, as we have already said, in its effect upon sculpture, an art that was earnestly pursued in Egypt. One of the earliest relics of Egyptian sculpture is in some respects one of the most admirable. This is a wooden statue of a certain Ra-em-ke, attributed to the fifth dynasty. The body of this ancient work is modeled with much skill and spirit, the head is lifelike, and the expression full of animation and action. It is one of the few spirited works of Egyptian sculpture, upon which conventionalism soon after laid its heavy hand. The art early became, and long continued, wedded to the service of religion; and statues of sphinx, man, and god alike assumed fixed types from which they were never permitted to deviate.

We have already spoken of the manner in which the more ambitious works of sculpture probably originated, in flat bas-reliefs, but slightly raised from the wall, and made distinct by high coloring. From these the high relief, and sculpture in the round, may have gradually emerged. It is possible also that the carving of columns progressed in certain cases from a bas-relief figure to the formation of the complete human form. Instances of this kind we possess in the columnar statues of Osiris, which, however, do not really act as pillars, but stand in front of square piers which perform that duty. Sculpture of such an origin naturally tended to the huge, in conformity with the massive character of the buildings with which it was associated. As a result, the most striking examples of Egyptian sculpture are cut on a gigantic scale, and, indeed, offer us size as their main element of merit. Of these the most enormous is the great Sphinx, which measures about 180 feet in its full length. But this was in part carved from the living rock, and is surpassed in the labor represented by the mighty colossi, which are entirely artificial. The sitting figure of Memnon is 53 feet high without the pedestal, while the face alone is 7 feet, and the ear 3½ feet, in length. These massive figures are marked by a certain severe dignity of expression, but are destitute of individuality, and lack grace, symmetry, and elegance. Anatomy is very little regarded. Yet we have much reason, from the occasional artistic taste displayed in these figures, to believe that if the arbitrary rules of the priesthood had been relaxed Egyptian art would have approximated much closer to nature, and, instead of degenerating as it really did, would have greatly progressed.

The bas-relief work of the Egyptian artists was not confined to the human figure, but represented the warlike and peaceful life of the people in an extraordinary variety of illustrations. These incised drawings were painted with crude and strong colors to give them distinctness, so that they included in one the twin arts of sculpture and painting. From such painted reliefs ordinary wall painting may have arisen. Egyptian paintings are also found on mummy cases and as illustrations on papyri. These have very little merit as works of art. Perspective is utterly ignored, and the figures are usually mere outlines, with no attempt at light or shade. Yet there is occasionally an individuality of character and a lifelike expression which indicates a suppressed power in the artist, checked by lack of freedom in the pursuit of his profession. A complete Egyptian temple, indeed, was a noble work of antique art, with its grand avenue of crouching sphinxes, its imposing façade, its lofty obelisks, its enormous and highly-decorated columns, its mighty statues, its painted bas-reliefs, its incised hieroglyphs, its extensive ground plan, massive dimensions, and imposing general effect. It was high art in its infancy, the massive wedded to the graceful, weight to harmony, singleness of purpose to variety of detail. In its formation all the earlier architectural conceptions were indicated. The earth mound had developed through the pyramid to the massive, sloping propylæum. The rude monolith, and the supporting tree trunk, had become the noble obelisk and the grand column. The rudely decorated rock front and quadrilateral doorway of the ancient cave dwelling had become the rich facade and grand entrance of the temple. All the more primitive architectural art had converged, and the magnificence of the Egyptian temple was the result. There was only needed further to get rid of the barbarian idea of the merit of mere size, to bring the sloping lines to the vertical, to gain more graceful proportions, better harmonized details, more symmetrical and simplified ornament, and the full glory of the Grecian temple would be attained.

In regard to ancient Asiatic art little need be said. Were we writing the history of art it would become of extreme importance, but in regard to the development of the artistic sense it in no respect goes beyond the art progress of Egypt. A rapid glance at its peculiar features must, therefore, suffice, since no Asiatic nation passed much beyond the infancy of true art.

In Asia we find two distinct schools of architecture, that of Assyria and that of India, each pursuing a course unlike that of the other and of Egypt. Of the Assyrian buildings unfortunately none remain. The bricks of which they were built have sunk into indistinguishable ruin. But we know that greatness of dimensions and massiveness of structure were essential features of their character. The walls were, in some cases, as much as twenty-six feet in thickness, while the rooms were remarkably narrow and long. In some palaces the walls appear to have occupied as much space as the chambers.

But if the external aspect of these edifices is lost, much of their internal decoration has been preserved. The halls and passages alike seem to have been paneled with alabaster slabs, on which were wrought in bas-relief the story of the wars and triumphs of Assyrian monarchs. At the portals stood huge winged bulls with human faces, and colossal lion sphinxes. In the palace of Sennacherib, at Kouyunjik, seventy-two halls and passages have been opened, with, as Layard tells us, nearly two miles of bas-reliefs, and twenty-seven portals guarded by massive bulls and lions. Among the bas-reliefs we find figured the façade of a palace along whose top runs a row of windows separated by Ionic columns. In another façade Corinthian capitals appear. Above the latter is an entablature, with its various features of cornice, frieze, etc. As these probably antedate the earliest known Greek work, they suggest the idea that Greece owes some of the most important features of its architecture to Assyria. The plans of all Assyrian buildings were rectangular, and there is reason to believe that the dome and the tower were employed as architectural features. In Babylonia enormous masses of ruins exist, much ruder in style than those of Nineveh.

There is one fact of much importance in connection with Assyrian art. Its great buildings were palaces, not temples. Here the monarch ruled, not the priest. The religious influences were powerful, however, and must have strongly affected the progress of art, but not sufficiently so to bring it to a standstill. The art which tended to decline in Egypt steadily advanced in Assyria, and the latest monuments of Nineveh much surpass the earlier in magnificence of conception and beauty of execution. Such, indeed, is the result to be expected in a people of practical tendencies, and in whom secular were not dwarfed by theological interests. The progress in art was not great, yet in some respects it went beyond that of Egypt. Such an advance appears in Assyrian sculpture, in which individual and race characters are better displayed, attitudes are less constrained and more varied, and greater attention is given to the details of anatomy. Yet the statuary cannot be said to rank high artistically, while the efforts at drawing and painting display an ignorance of perspective equal to that of Egypt. The practical character, and lack of imaginative activity, of the Assyrians, must have stood greatly in the way of any vigorous art development.

In India, on the contrary, we find a people of remarkably active imagination, and who sinned as greatly through superfluity as others through simplicity. There is here none of the uniformity of Egyptian architecture, but edifices exist in a great variety of styles, while they are frequently decorated with the utmost profusion of ornament. In the pagoda we have again the pyramid, marked here by a great excess of height over base. The pagoda of Tanjore, the grandest of Indian temples, is 83 feet square in base, and nearly 200 feet high. It is built in fourteen successive stories. Probably the most remarkable examples of Indian architecture are the immense rock excavations, particularly those at Ellora, which are utterly bewildering in their extent and their great variety of architectural detail. These, indeed, are of late date, and lack the grand simplicity of the earlier rock temples; yet their vast extension along three or four miles of the rock face, their immense number of columns, portals, cupolas, towers, etc., their highly ornate character, and the extraordinary labor which they involve, certainly place them very high among the mechanical achievements of mankind.

In the purely artistic sense, however, none of the Hindu work ranks very high. Their sculpture, though abundant and greatly varied, has little art value. It displays an exuberant imagination, but no exalted taste. It was, as elsewhere, checked in its unfoldment by sacerdotal authority, and the only praise that can be awarded it is for its occasional vastness of scale and repose of expression. The art of painting made no progress whatever. The efforts in this direction are infantile.

The art of the remaining Asiatic peoples doubtless received its impulse from the nations already mentioned, and failed to make any progress beyond them. The great empire of Persia remained at a low stage artistically. The ruins of Persepolis are of considerable merit as works of architecture, being remarkable for the ornate character of their columns with double bull's-head capitals, and for their grandeur of conception and picturesqueness of detail. Yet the sculpture which decorates them belongs to the infancy of art, though it displays much skill in mechanical execution. The art of Persia was not influenced by religion. No sculptural images of the gods were permitted. The king in an attitude of repose, receiving homage or tribute, was the main subject of the sculptor's art in the numerous bas-reliefs. They possess very little variety, action, or character. They are, indeed, a little more naturalistic than those of Nineveh, but ruder in finish.

A striking fact in the art history of these antique nations is that while the Egyptians and Hindus made their sculpture and architecture strictly subservient to their religion, the Assyrians and Persians employed these arts in the service of their sovereigns. Temples were built, indeed, but the more important buildings were palaces. Their art work illustrated the history of their kings more than that of their gods. This secular character of Persian art arose perhaps partly from the fact that its impulse came from Assyria, but mainly from the fact that the hierarchy of the priesthood was gradually losing its controlling influence, and secular interests were coming into the ascendant. In Egypt and Hindustan the theological dwarfed the secular influences, conventionalism choked art, and the primitive effort to represent divinity by images of terror had become civilized into the union of animal and human attributes,—the lion and eagle-headed man, the winged genius, the many-headed and armed Indian deity, and the like grotesque combinations. This tendency retained its influence in Assyria and Persia, and even extended into Greece, where it is displayed in the many-breasted images of nature. But it became gradually supplanted by images of the complete human and animal figure, in which nature struggled with conventionalism. The victory in this effort was finally achieved in Greece, in which land secular interests first gained a complete triumph over theological, and the study of the visible replaced that of the imagined and fanciful.

The rapid and extraordinary development of art in Greece would undoubtedly seem far less wonderful to us than it now does, could we restore the lost chapters in the early history of this remarkable people, and particularly if we could bring back the vanished history of the Phœnicians and of the nations of Asia Minor, and thus gain a knowledge of the influences which lay at the basis of Greek art. That the actively commercial people of Phœnicia were considerably dominated by priestcraft we have reason to believe, but there is little doubt that with them secular interests had gained a greater influence than in any contemporary nation. Their art, if it could be recovered, would probably show this securalization, and a tendency to the study of nature to which their commercial habits must have inclined them. Yet quite probably the Phœnicians attained no high standard in either art or literature. They were most likely a highly practical and but slightly imaginative people, and their main service to the cause of art was doubtless the transportation of the culture of Egypt, Assyria, Persia, and Syria to European shores. The art progress of Asia Minor, while to a considerable extent original, was undoubtedly hastened in its development by Phœnician influence, and both directly and through the intermedium of Asia Minor the leaven of Phœnician art ideas entered Greece. There is abundant warrant for this belief in the many points of analogy and similarity between the Grecian and the more ancient art. In the one we have the culmination of the tendencies displayed in the other.

Yet though Greek art was hastened and moulded by the arts of the earlier civilizations, it was by no means subservient to them. It possessed original elements as well, too strongly declared to be set aside by foreign influences. The new ideas were grafted on an indigenous stock, and the resultant growth was marked by a decided originality. The earlier monuments of Asia Minor are mainly tombs, and in many cases show strong indications of having been copied in stone from wooden originals. In the Lycian tombs the stone work is carved into a representation of joints put together with pins and dovetails, while the cornices resemble the rounded ends of trees. A portion of the work of Asia Minor is closely similar to that of Etruria in Italy, and seems to indicate the influence of some single, widespread race of builders, the creators of this school of art. These were perhaps the Pelasgi, a people who seem at an early date to have extended from Asia Minor through Greece to Italy. Their work is marked more by the character of massiveness than grace, and they seem to have been mainly inspired by the archaic idea of the artistic merit of mere hugeness. Another race, the Dorian, also early overspread Greece, to be followed later on by the Ionians. These two peoples gave rise to two distinct orders of architecture, the Doric and the Ionic. We know little of the steps of origin of either. These have vanished with the wooden originals which probably constituted the indigenous models of this architecture. Of these two orders the Doric is particularly marked by features of home growth, and retains the simplicity of the wooden structure in its plain columns, without ornamental base or capital and diminishing in diameter from the base upwards, and in the lack of profuse ornamentation in its entablature. The Ionic is much more ornate, and the discoveries in Assyria, already mentioned, indicate that the idea of the Ionic capital was, partly at least, derived from this source; though a rude capital has been found in which the Ionic volute is indicated in a mere rounding off of the corners of a block of stone into a curved form.

There is little reason to doubt, therefore, that the rapid development of Grecian architecture was due to a growing knowledge of foreign progress in this branch of art, and the modification of primitive edifices by the introduction of these new ideas. But in doing so the Greek intellect and active imagination, chastened by a long and loving study of the forms of nature, and little controlled by ideas of the vastness and vagueness of the supernatural, threw aside all conventionalism and went directly to nature for their model of art. It was the earliest appeal to nature alone, and its result was a development of the true artistic spirit. The idea that mere size is an important constituent of art finally vanished in the minds of this nature-educated people, and that of the superior merit of just proportion, harmony of combination, and simplicity of ornamentation took its place. And in consequence the Greek temple arose, the culmination of ancient architecture, and the final step of development in what we may here denominate gravitative art.

The art of sculpture in Greece grew up under the same influences, a strict appeal to nature, a revolt from authority, and a complete secularization of thought, in which man became the noblest object in the universe, and the gods were simply men with superior attributes. The loving study of physical nature was the influence that ruled in Greek art, and from which it derived its great pre-eminence over that of the more ancient world. Greek sculpture began, according to tradition, in the formation of wooden statues, some of which, attributed to Dædalus, existed until the later days of Rome. These rude forms, antedating by nearly a thousand years, if we may believe traditional chronology, the classic age of Greece, possessed a grandeur and dignity which excited the admiration of Diodorus Siculus in the days of the culmination of art.

At a later date Greek sculpture rapidly progressed, through the close study of, and earnest effort to imitate, living models. The earlier works in wood present an interesting analogy to the antique wooden statue, of Egyptian origin, of which we have spoken. This period of art was also marked by the production of sculpture in low relief, probably borrowed from Assyria, and employed almost exclusively down to the seventh century B. C. Even at the time of Homer the minor arts had made great progress in Greece, if we may judge from his descriptions. And in these we have much warrant for the belief that there was an active borrowing of art products and art ideas from the East. But everything borrowed was transformed and brought to new life by the magic touch of Grecian taste. This was remarkably the case in sculpture, in which the ardent study of beautiful human forms led to a rapid development. Even at an early date the distinguishing differences between male and female forms were clearly indicated. To the one were given swelling muscles, large articulations, vigorous strength; to the other elegance of form, grace of action, ornamental costume, and the charm of womanly beauty. This study of anatomy steadily developed. Not content with reproducing the graces of a single form, the artists selected the choice features from a number of models, and sought to combine them into a representation of perfect human beauty.

The progress thus attained took many centuries in its growth from the rude works of Dædalus to the noble productions of Phidias, but the advance gained was equal to that of milleniums of more ancient art. Sculpture long continued in the service of religion. The great works of Greece were not palaces, as in Nineveh and Persepolis, but temples. In Greece there were no monarchs, and honor continued to be paid to the gods, but it was an honor that reflected abundant glory on man.

Among the noblest works of sculpture were those wrought in relief in the pediments of the great temples, and particularly in those of the supreme era of Greek art, the age of Pericles. The great sculptures of the Parthenon are at the acme of art so far as the exact representation of human and animal forms is concerned. The isolated work of this period was of equal artistic merit. The colossal statues of Minerva at Athens and the Olympian Jupiter at Elis were the supreme works of the Phidian chisel, and were the first which added to the majesty of the god, represented by size, the nobility of the perfect human form. Greek art after this period sank from the service of the gods into that of man. The severe dignity of the work of Phidias was soon succeeded by the softness and sensual charm of the later school, in which the hand of Praxiteles achieved special distinction. The masterpieces now became Venuses and Apollos, convenient names to express noble representations of womanly beauty and manly vigor. From this period art declined in Greece, and eventually sunk into utter decadence.

As to the development of the art of painting in Greece, we are greatly in the dark. No example exists, and we have only the somewhat vague remarks of contemporary writers for guides. There are several stories extant which indicate a great proficiency in the exact imitation of nature, but little to show to what extent the art of perspective was understood, or what proficiency in coloring was attained. The works of Zeuxis, Parrhasius, Timanthes, and others are praised in the highest terms by those who were fully capable of appreciating excellence in art, and Apelles, the greatest of the Greek painters, is credited with extraordinary skill in portraiture. But in all descriptions of the work of these artists very little definite information is given as to the methods and materials employed and the technical skill attained. In regard to these particulars we have only the Pompeian wall paintings for guide. In these we find great facility, and an advanced stage of imitative exactness; and the perspective, while not scientific, shows considerable progress, though it compares very unfavorably with that of the present day.

As for the other branches of art in which the ancients excelled, including their mosaic work, pottery, glassware, gem-cutting, etc., it will be sufficient to say here that in these they displayed a mechanical skill and an exalted artistic taste in full accordance with their productions in the higher fields of art. In the Grecian pottery, indeed, we possess our only direct record of Greek proficiency in the art of drawing and coloring, and the evidence of the decorated vases leads to the conclusion that the Greek painter stood considerably below the sculptor in the excellence of his work, despite the high praise of contemporary critics. These vases, indeed, are exquisitely ornamented, the figures display graceful action and are often marked by much grace and beauty, the composition is excellent, and the scenes are delineated with truth and dignity. But there is no evidence of a knowledge of the laws of light and shade, while the coloring is very simple, the pictures being in monochrome, or a few simple colors, with scarcely an attempt at shading or blending of tints. This vase work, it is true, is no just criterion of Greek painting. Yet it indicates that some of the most important requisites of the art as now understood were unknown.

In regard to Roman art we can say little more than in respect to Roman literature. It was mainly an imitation of the Greek, beyond which it made little or no advance. Yet it displays certain characteristics to which some attention should be paid. In the days of its culmination it was not, like the art of Greece, devoted to religious subjects. Secular interests were alone dominant in Rome, and religious fervor, after its long decline through many preceding centuries, here finally died. The world of the past died with it, and the ruins of the pagan faith were swept away, to make room for a new and more exalted standard of belief. Thus religious art gained no foothold in imperial Rome. The great works of architecture were palaces and amphitheatres, baths and acqueducts. Those of sculpture were statues of the emperors, instead of images of the gods. Painting dealt with such subjects as are found on the walls of Pompeii. Art made few steps forward, but many backward. Yet there were certain important variations in the practice of architecture, of great value in their relation to modern art. In fact, we have now, for a period of much more than a thousand years, little more than architecture to consider. The Romans found it easier to rifle than to rival Greece, and it was a much more feasible method to fill their villas with stolen statues that to carve new ones. In architecture, however, home work was necessary, and many edifices of noble proportions arose.

The Romans employed all the Grecian orders of architecture, the Doric, Ionic, and Corinthian. The latter florid order, indeed, which took little root in Greece, was more pleasing to the less simple taste of Rome, and was widely used. To these they added two others, the Tuscan and the Composite, the latter being a compound of Ionic and Corinthian. Nor did they confine one order to one building, as in Greece, but combined the several orders in some of their most excellent structures. Thus the lower floor of the Collseum is Doric, the second floor Ionic, and the third Corinthian, with a fourth story marked by Composite ornaments in its capitals. In addition to this they made free use of the arch, an architectural expedient known long before, yet very sparingly employed in Egypt, Assyria, and Greece. From the arch gradually emerged the vault in its various forms, and finally the complete dome. And these expedients were combined with a freedom that could not but lead to new effects in architecture. To the above variations we may add a florid style of decoration which in time led to barbaric excess.

The severe simplicity of the past, indeed, was at an end. With the entrance of Christianity into the world entered certain characteristics in art which as definitely divide the ancient from the modern world as do their differences in religion. Stern simplicity gives way to complex decoration. Massive dignity yields to variety. The gravitative is replaced by the aspiring in architecture. The physical yields to the spiritual in art generally. Christian art sways below Greek art through the pure weight of the idea with which the artist is burdened. But it soars above Greek art in that it is imbued with a new spirit. In the representation of the visible form the Greek was inimitable, and mainly because he confined his attention to this one end. Singleness of purpose enabled him to excel. But in Christian art there is added to the Greek idea an effort to represent the invisible spirit, a doubleness of purpose which has stood in the way of supreme excellence, but which, if fully achieved, will lift art at length to a height far beyond that of the noblest work of Greece.

In considering the origin of modern architecture we must return to the Roman as its point of departure. This architecture, beginning almost exactly with the Christian era, and based on the Greek as its model, deviated considerably from the latter in its details. This deviation consisted particularly in the free employment of the arch and the dome, and the introduction of the concave apse and the circle in place of the strictly rectangular lines of the Grecian temple. The many columns of Greek art were reduced in number, the space left was arched over, and a new and picturesque effect produced. And, finally, in the circular temples, as in the Pantheon, the Greek idea was almost completely departed from, the columnar portico alone remaining. Among the most interesting of these new forms was that of the basilica, since it became the model of the early Christian architecture. The basilica probably began in an open central space, with lateral porticoes, which were marked off by rows of columns. This space was afterwards roofed over, and a sort of gallery was formed over the porticoes. At one end was a recess, often circular, also set off by a row of columns. This edifice, the Roman hall of justice, with its double row of columns, which separated the narrow side aisles from the wide central nave, and its semicircular apse, was imitated in the Christian church. It is yet the ruling form in Gothic architecture, though the later adoption of a cruciform ground plan, and the elaboration of the centre of the crossing aisles, over which was thrown a dome, gave a new and striking aspect to some of the mediæval church edifices.

Throughout the whole extent of the Roman world, with the exception of Egypt, the Roman architecture made its way, and its grand remains served as suggestive models for the architects of that new world which grew up on the soil of the fallen empire of Rome. But into this new architecture fresh elements entered. The exigencies of the feudal system produced a style of architecture all its own, the massive and gloomy castle, whose features arose from no artistic intention, but as absolute necessities of defence. Yet the singleness of idea in these structures had its natural result in yielding a whole which was not without the harmony and effectiveness of true art. But the castle, although it has had a certain influence on more modern architecture, had none upon the ecclesiastic style, from which its purpose definitely separated it.

The feudal castle was the only indigenous product of Middle Age architecture. But under the influence of ancient architecture three new styles grew up, each of which attained a high development in the mediæval period. These were the Byzantine, the Saracenic, and the Gothic. In Constantinople the eastern and western art ideas met, as in a centre, and from their fusion grew up the Byzantine style. Roman architectural art, indeed, speedily degenerated in this new city, and when Justinian wished to erect a temple which should be worthy of the great God of Christian worship, he was wise enough to apply to the east, and import skilled artists from Persia to aid him in his object. As a result of this mingling of ideas there grew up a new style of architecture, some of whose monuments have never been surpassed. In Justinian's great edifice, the noble Church of Saint Sophia, all the old conceptions converged into a new product. The main effect of this grand structure was obtained by its magnificently vaulted areas, and the splendor of its gold-grounded mosaics, in which the two purposes of decoration and a record of the tenets of Christianity were combined.

The influence of this new style made itself strongly felt in two directions. It was first brought to bear on Venetian art, and is particularly displayed in the celebrated church of St. Mark, which is entirely Byzantine in style. Through Venice it had a great influence upon Lombardy and Southwestern France, though it failed to make its way into England and Northern France.

Eastward, however, it exerted a highly important influence upon a new developing civilization, the Arabian, and gave the impulse to the Saracenic architecture.

There is nothing to indicate that the Arabians brought from their deserts any declared architectural ideas, while there is much evidence to prove that they fully availed themselves of the services of Byzantine and Persian artists. In their buildings were retained the general features of the Byzantine edifice, with its methods of brick-building and stone-cutting, of vaulting and decoration. But to these new features were speedily added, the minaret supplemented the dome, the arch expanded into its beautiful horseshoe shape, the dome elevated itself and grew into its charming bubble-like outline, ornament was profusely used, and sculptured and inlaid work were abundantly employed, all of which rapidly modified the general effect of the Saracenic edifice, and gave it features peculiarly its own.

The remarkably active Arabian intellect was, indeed, not likely to be long constrained by the authority of the past. It broke out into new forms in which the light and ardent fancy of the race amply manifested itself. The swelling arch and dome, the slender and lofty minaret, with its corbelled galleries and profuse ornamentation, the elaborately carved pendentive, and the richly ornamented capital, were all marked features of the Saracenic style, the lightest, most graceful, and most varied in detail, while harmonious in proportion, of all human architecture.

A striking and peculiar feature of the Saracenic came from the strict charge of the Koran that no natural objects should be represented. This prevented the adoption of the old ornamentation of statue and bas-relief, and the Arabian artists were confined to the employment of geometrical designs. Fortunately so, perhaps, since their active fancy branched out in this direction into an intricacy and variety of conventional ornament without parallel elsewhere in the world. Rich painting and gilding, elaborate mosaic work in walls and pavements, exquisite woodwork in pulpits and doors, costly inlaying of precious stones and of the verses of the Koran in marble mosaic, and an intricate elaboration of scroll-work in the most varied and elegant curves, gave to the interior of the Saracenic mosques a brilliant effect, which is like nothing else in the history of art.

This style of architecture became as widespread in its outgrowth as the preceding architecture of Rome. Throughout Northern Africa, Sicily, and Spain, and particularly in the last, its charming monuments arose. In the east it extended from Syria to Persia, and finally to the distant peninsula of India, where noble monuments of this new art arose in striking contrast with the heavier and utterly different monuments of Hindu architecture. Here, indeed, stands the most charming of all productions of architectural art, the Taj Mahal, at Agra, the very acme of art progress in the direction of lightness and grace, harmony of proportion and rich variety of ornamentation.

In the west the genius of the architect developed in another direction. The lightness and fancy of the Arabian mind were replaced by the sombre depth yet luxuriant imagination of the German intellect, and slowly upon the foundation of the Roman basilica arose the Gothic church, a style of art as distinctive of the western Middle Age thought as the Saracenic mosque was of the eastern. We cannot undertake to trace the steps of development of this architectural style. In it the influences of Roman and Byzantine art were mingled with an originality of thought as strongly marked as that which displayed itself in the Arabian empire. Just by what steps the pointed replaced the round arch is not easy to decide. Several theories have been advanced, each sustained by good reasoning. But from the fact that it appeared simultaneously in separated regions of Europe, and this at the period of the Crusades, there is some warrant for the opinion that it was brought by the crusaders from Asia, where a similar arch was in use in Saracenic structures. With its adoption other important changes took place in church architecture. The heavy proportions of older edifices were reduced; piers, still massive in diameter, replaced columns; and long reeded shafts succeeded to the classic pilaster. New systems of vaulting, and new methods of combination of shafts and ribs, spread over Europe. Elaborate ornamentation came into use. Richly decorated windows, with complicated tracing; a profusion of architectural adornment of the pillared doorways; an extension of these features over broad and lofty façades; an abundant employment of the spire; and a superfluity of sculptured figures of men and animals, all combined to form an intricate whole as imposing as the work of the Saracens was beautiful, and more awe-inspiring in its vast interior, dimly lit through painted glass, than any other production of the artistic intellect of man.

We cannot attempt to trace the extension or the variations of this system, which reached the culmination of its development in the thirteenth century, and immediately thereafter commenced its long decline. It became fully unfolded in the four countries of England, France, Germany, and Spain, but in Italy was checked by the preponderance of other influences, the Gothic type there becoming mingled with and modified by the Byzantine and Roman architecture and the styles of the earlier church edifices. A more important consideration is that of the real development of art indicated in these mediæval structures, as compared with the grand works of classic antiquity. If we compare the mosque and the cathedral with the ancient temple a remarkable unlikeness of conception will appear, and one that is full of significance in the history of art. For several thousand years the architecture of the ancient world slowly progressed, until it reached its culmination in the Greek temple. Beyond that point it could not go. Its limit in its particular line of development had been attained. Starting from this as a new point of departure, a fresh line of development was opened, and mediæval architecture began, reaching its highest development in the intricate adornment of the Gothic and Saracenic edifices. The severe simplicity and chaste harmony with which the past had ended were succeeded by profuse variety and intricate combination, in which the delight of the cultivated eye was replaced by that of the aroused and outreaching imagination.

But there are important distinguishing features in these diverse styles upon which particular stress may be laid. In the cathedral as in the temple an idea was involved and worked out to its ultimate, and a consideration of the diverse character of these ancient and modern ideas may aid to a proper comprehension of the true comparative value of the resulting methods. The idea which culminated in the temple was that of gravitation. That which produced the cathedral was aspiration. The one attained the climax of the perpendicular. It pressed downward upon the earth in all the massive elegance of its lines and proportions. The other seemed to spurn the earth. It broke away from it in all its soaring curves of arch and dome, and in the heavenward-pointing finger of its spire. In all the disparity of Gothic and Saracenic architecture they agree in this one particular: they soar where the Greek temple gravitates. It was the spirituality of the Christian creed replacing the earth devotion of the Greek mind. With the latter the earth was all. The joyous Greek had no thoughts for the supramundane. He reveled in the charms of visible nature, the beauty of form and proportion, the harmony of the lines of the forest, the grand simplicity of the mountain, plain, and sea. His thoughts clung to the beauty of earth, and his art weighed steadily downward. The mediæval artist, on the contrary, cared little for the mundane. His thoughts dwelt in the supramundane. His soul climbed ever upward, reaching for something which eye could not see but which faith felt. And in his art this aspiring tendency took shape. The noble edifices he erected spurned the earth through all their lines and arches, and grasped with a hundred hands at heights unseen.

The same influence ruled in the Arabian architecture, yet with a difference. The awe with which the Christian viewed the supernal, and which he embodied in the grand gloom of his religious edifices, was wanting to the light-hearted children of the South. They aspired, also, but with no sense of awe in their aspirations. The heaven towards which they reached was no mystery. It lay before their eyes as clearly as the earth before the Greek's. With them all was light, rich, and joyous, though upreaching. There was no weight upon their minds, no sense of mystery and vague majesty in their souls. And their mosques were their intellects built into stone, aspiring, fanciful, light, and gay, and without a trace of the metaphysical gloom of German thought. In these two modern styles of architecture pure art took a grand stride in advance of the level attained in Greece, from the fact that they were filled with the spirit of a new idea. The mind had developed, and art developed with it. That the sense of spirituality succeeded in fully manifesting itself cannot be said. It was a feeling far more difficult to embody than that which inspired the Greek artist. But it added to the earthly in art a sense of the infinite, and lifted alike the soul and the work of the modern artist to a distinctly higher level in the kingdom of thought.

As to the more modern architecture nothing need here be said. It fails to yield indications of any important step of advance in art development, with which alone we are concerned. The styles of the past have been mingled in heterogeneous combination, but out of the medley nothing of decided art value has emerged. The distinctiveness of the Greek, Gothic, and Saracenic styles has been succeeded by an indefinitely varied composition, often of great beauty and appositeness, indeed, yet with no strikingly new architectural idea. What may come of it all in the future it is impossible to premise. A new flower may grow out of the commingled germs. But as yet all is in a transition state, in which the sense of utilitarianism principally declares itself, though often combined with a beauty in which effect is subordinate to use, and a variety which is the most marked characteristic of modern architecture.

Modern sculpture, important as it is and greatly as it has been extended, we may dismiss with a few words. It indicates rather a decline than an advance in art development, as compared with the masterpieces of Greek art. Sculpture, indeed, is the art of the body, and this chapter in the history of art was finished in Greece. The art of the soul, which is the distinguishing feature of modern art, is alien to the rigid demands of the marble image. Yet in this respect some progress has been made. In the delineation of a perfect human form with all its graces of proportion and vitality of action, the artists of Greece were superb. Intellectual expression was also in many instances fully attained. But in what we may call spiritual expression, the delineation of the higher aspirations and the profounder emotions of the soul, the masterpieces of Greek art are lacking. Their emotions are typical rather than individual. Feelings are generalized rather than specialized. As Gibson says: "The gods represented by the sculptors were pure, passionless and beautiful." Into their representations of man much of this deific impassiveness crept. The stronger types of passion, it is true, were represented, horror, despair and anguish, but little of those more delicate shades of feeling which distinguish the individual soul.

It is in this respect that the art of the modern sculptor differs from that of the ancient. He is endeavoring to reproduce individual men, not man as a type, and to chisel into his marble block those finer shades of emotion which indicate the more delicate movements of the soul. And he is dealing with a new man, who had no representative in Greek times. His subject is the man of the Christian world, inspired by new aspirations, and wrought upon by a thousand influences which of old did not exist. The conditions of the past were uniform. Those of the present are multiform. The intellectual singleness of the ancient is replaced by an intellectual complexity in the modern world, which has entered far within that temple of the higher civilization upon whose threshold stood the great thinkers of Greece.

If the modern art of sculpture is secondary to that of Greece, that of painting, on the contrary, has gone far beyond it. Painting, indeed, attained a marked unfoldment in the accurate representation of form in the Greek period. But the work of the Greek brush left no examples for the instruction of modern painters, and the art has almost wholly grown up anew. It is an art well adapted to the genius of the modern world. As the art of sculpture was particularly suited to the Greek ideal, that of the representation of perfect physical beauty, so painting is the true art of Christianity, from its facility in the representation of emotion and spiritual sentiment.

Like all modern art, it came into being in the service of the church. But in this service it decayed rather than advanced, from the neglect of attention to nature, and the conception that it was sinful to look at the naked figure while painting it. The Greek painters, however, had transmitted some imperfect remnants of their methods to the artists of Constantinople, and it was from this city that the impulse came which gave a new birth to the arts of sculpture and painting in the west. In the latter half of the eleventh century Greek painters were sent for by several Italian cities, which, grown rich by commerce, rivaled one another in their efforts at adornment. From this period the art began slowly to advance. Debased as it had become in the Eastern Empire, its condition there was still far superior to that of the West, and the artists of Constantinople diffused throughout Italy the ideas of beauty they had inherited from the classic past.

The new movement in art to which this impulse gave rise found a worthy exponent in Cimabue (A. D. 1240). It cannot be said, indeed, that this artist, despite the high praise awarded him by some critics, went much beyond his Byzantine instructors. But in the work of his great pupil, Giotto, the true father of modern painting, the art took a grand stride forward and the stiff, unnatural, and inexpressive work of the earlier period was succeeded by a naturalness and beauty of expression which showed that the artist's eye had again turned to nature as the only true model of art.

In the fifteenth century the final dispersion westward of the artists of the Eastern Empire on the capture of Constantinople by the Turks, spread the artistic spirit far throughout Europe, affecting not only the Italian school, into which they infused new vitality, but also vigorously influencing the north, and particularly the Netherlands, where an active school of painting arose. In the hands of the great painters who now appeared the art became spiritualized, the deeper sentiments and emotions of the soul became the artists' favorite themes, and the spirit began to show through the painted form with a fulness which could not be brought into the frigid curves of the marble image.

In the further review of the development of the art of painting we can do little more than give a list of illustrious names, each of which added something to its growing perfection. The Florentine school advanced through a series of great artists until it reached its culminating point in the sublime work of Michael Angelo, the Greek of the Middle Ages, in whose hands sculpture regained its olden glory and painting became sculpture on canvas or on wall. He was the last of the Greeks, as Raffaelle was, in a certain sense, the first of the moderns. In the hands of this greatest of painters the work of the many able artists who had preceded him converged, and yielded results without a parallel in the history of this branch of art. In him were combined the sweetness of the Umbrian with the dignity of the Florentine school, the sublimity of Michael Angelo with the beauty of Leonardo da Vinci, the rich coloring and fine perspective of the Venetian school with the admirable anatomical skill of Masaccio and the spiritual depth of Fra Bartolommeo. All the past of the art flowed into him and became combined and spiritualized, and the art of the painter grew to a height of perfection which rivaled that attained by its sister art of sculpture twenty centuries before.

To the results gained in Italy by the great artists named, and by their contemporaries, Fra Angelico, Andrea del Sarto, Titian, Tintoretto, Paul Veronese Correggio, and a host of others who might be named, but little has been added by more modern artists. There have been steps of advance, but more in technical method and variation of style than in artistic excellence. The rapid attainment of a high standard by the active Italian artists has been followed by a slow progress in special directions, and by a secularization of the art, through which the former devotion to religious subjects has almost disappeared.

At the same period that painting was making this marked progress in Italy it was also actively developing in the north, under a similar initial impulse. In the commercial cities of the Netherlands it was actively pursued, and here, in the city of Bruges, early in the fifteenth century, John Van Eyck brought into use the method of painting in oil, the most important step in the whole mechanical progress of the art. We can but name some of the more important artists of this age. Among the many great painters who succeeded the Van Eycks in the Netherlands, the noted names of Rubens and Rembrandt will suffice. In Spain Velasquez and Murillo, in France Poussin and Claude Lorraine, in Germany Albert Dürer, in England the German artist Holbein, appear as the most noted representatives of the art. But a catalogue of the names of the great painters of modern times may be dispensed with. It will suffice to say that the art has moved steadily from the anatomical towards the emotional, and from the representation of scriptural subjects to that of the immensely varied themes of modern secular life, gaining perhaps little in height, but much in depth, and a power of expressing the hidden significance of the visible landscape, and the spiritual sentiment which animates the human face, to which there is no worthy counterpart in ancient art. Among the Teutonic peoples it has not made the rapid progress displayed in the Latin nations of the south. There are great names in the Netherlands, but few in England and none in Germany, during the later centuries. This lack, however, is likely to be well filled in the future. The nations of German descent are coming actively forward into the service of the art, and there is reason to hope that their deep-revolving habit of thought will add to the lightness, richness, and technical excellence of the work of the south that profound depth of significance which is manifested in the higher literary work of the north. It is in this direction, that of expression, that all art must now advance. The perfection of physical beauty has long since been attained.

The final branch of the fine arts to which we shall allude, that of music, is in great measure of modern origin. It was much practiced in ancient times, and many instruments were invented, but its development was slight. The music of the Greeks is entirely lost. Out of the few remnants of their system of notation nothing satisfactory can be made. There is no reason to believe that they knew anything of harmony, and their melodies were probably of the nature of *recitative,* being mainly employed as an accessory to the drama.

In modern Europe this art, so little developed in the past, has made enormous progress, and has unfolded into our most complex means of emotional expression. The music of the early Christian church was probably very crude and barbarous. It was first reformed by St. Ambrose, late in the fourth century, and more importantly by Gregory the Great, in the sixth century. The Gregorian chant is still retained in the Italian church, and is the basis of their preeminence in singing. The method of musical notation advanced very slowly during the succeeding centuries. Its great improvement was the work of a Benedictine monk, Guido of Arezzo, in the eleventh century. To him is due the employment of the modern staff, and the practice of writing notes between as well as on the lines. He also adopted syllables to express the notes, and these, with little change, are still in use. In fact, in his hands music became a written language, and the requisite conditions for its later development were largely produced.

The invention of counterpoint has also been attributed to him, but it had probably grown up slowly in the preceding period, and part-music was written in Flanders and Burgundy as early as 920. It was developed by Guido, but was yet very crude. Soon after its invention four-part music was composed. About 1450 the parts were increased to six. During this interval music slowly advanced, and the system of notation became gradually improved until its present form was assumed, though little is known of its steps of progress. Up to the period of Guido the plain chant had consisted of notes equal in time value. But now musicians began to feel the importance of rhythmical variation, and one Franco of Cologne wrote a treatise on the subject in which he distinguished notes of three different lengths, and offered other important suggestions. It is to the extended and improved systems of these two writers, Franco and Guido, that we owe the highly perfected musical notation now in use. The organ, which came into general employment about the same period, aided greatly in the introduction of harmony. Through its ease of production of simultaneous sounds the beauties of concord were quickly felt, and the science of harmony continued to develop from that time to the beginning of the eighteenth century, when it became almost perfect.

During the period mentioned, from the eleventh to the fifteenth century, popular music greatly improved, many secular airs were introduced, and the church often availed itself of some of these airs for the themes of its masses. This was the age of the minstrels, jongleurs, troubadours, and minnesingers, who sang their stirring strains from castle to castle, and did much to improve music in the Middle Ages. In the fourteenth century music became greatly cultivated in the Netherlands, in the rich cities of which region it held the supremacy for a century and a half, while from this centre of musical activity teachers and composers made their way to all the countries of Europe. During this period counterpoint was greatly developed, the oldest known contrapuntal masses being by Dufay, at the end of the fourteenth century. The most famous Flemish composer of this period was Josquin des Prés, who died about 1530. He gave much new sympathetic expression to music. In the sixteenth century the madrigal (an elaborate vocal composition, usually in five or six parts) became the favorite form of musical composition, and was extensively cultivated during two centuries. Of the composers of this century the most famous were Palestrina of Italy, and Orlando di Lasso, the last of the great school of the Netherlands. After the death of the latter Italy gained the ascendency in music.

Melody, which had in the preceding period been much neglected in favor of harmony, now again became cultivated, and in the able hands of Palestrina and some of his contemporaries musical science rapidly progressed. Several keyed instruments were now in use, and the violin had reached a stage of wonderful perfection, so that the means of musical cultivation were abundant. The oratorio is said to have been invented about 1540, by St. Philip Neri. In its first form it consisted of short, simple poems on sacred subjects, sung with instrumental accompaniment. But its development was rapid, and during the first half of the seventeenth century it unfolded into the elaborate composition of the modern oratorio. Music had also been long an accessory to the drama, but it was not until this period that the lyrical drama, the first form of the modern opera, made its appearance. In the year 1600 a musical tragedy, called *La Morte di Euridici*, was performed at Florence, the crude beginning of the opera. In the same year a religious drama, *L'Anima é corpo*, the forerunner of the modern oratorio, was performed at Rome.

Thus at this period music had unfolded into all its modern forms, and was ready for the rapid advancement which succeeded. During the seventeenth century both oratorio and opera were ardently cultivated. The art culminated in Italy about the beginning of the eighteenth century. Scarlatti, who flourished at this period, was the founder of the celebrated Neapolitan school, and a most industrious writer. Among his many works are included no less than 117 operas. He was followed by numerous meritorious writers, who greatly improved the art. Yet during this century music declined in Italy, and passed to Germany, where a remarkable development took place.

The eighteenth century was the great age of orchestral composition, as well as of opera and oratorio. Its impulse in Germany is due to Bach and Handel, who flourished in the first half of the century. These two artists devoted themselves mainly to sacred music, and far surpassed the Italian composers in the sublimity of their oratorios. The *Saul*, *Samson*, and *Messiah* of Handel have never been surpassed, while the *Ascension* and the *Israelites* of Bach are magnificent compositions. The latter half of the century was distinguished by the great names of Glück, Haydn, Mozart, and Beethoven, an unrivaled quartette, who carried music almost to the supremacy of perfection. Haydn had a wonderful genius for melody, and produced many remarkable orchestral compositions. Glück, at the same period, attained great success in opera, and first enunciated those principles of correct operatic composition which have been so vigorously reiterated by Wagner, in our own day. The sweeping away of the formal and artificial character of Italian opera, which he began, was completed by Mozart, one of the greatest and most universal of musical geniuses. Through the impulse which they gave a new and more natural era began for the opera. Beethoven, with whom began the music of the nineteenth century, stands without a peer in his peculiar field. In his hands the symphony gained its grandest proportions. Of his noble "Ninth Symphony," Wagner says, that in it "the domain of instrumental music was exhausted."

Of the remaining writers of the century we can give little more than the names. Mendelssohn of Germany, in his noble oratorios of *St. Paul* and *Elijah,* and his overture to the *Midsummer Night's Dream,* proved himself a genius of the highest order, while at the same period Rossini in Italy gained pre-eminence in the composition of florid music. The remaining names of Italian composers of whom we may speak are those of Bellini, Weber, Donizetti, Auber, and Verdi, to whom are due many of the popular operas of the present day. The French stage of the same period is noted for the brilliant works of Meyerbeer, the author of *Huguenots* and other favorite works, while the German operatic list ends with Wagner, to whom we owe a new theory of composition which may prove to be, as it is claimed to be, "the music of the future." In his theory it is the true office of the music to wed itself closely to the words, and simply intensify the emotion raised by the drama. The aria of the old opera has no place in his conception. It is a mere brilliant, which disturbs the just effect of the composition. With him opera is an "endless melody," in which the music is closely linked to the sentiment of the words, while the orchestral accompaniment is semilarly subsidiary.

Among the celebrated Germans who have devoted themselves to instrumental music may be named Schubert, Chopin, Schumann, Thalberg, Liszt, Rubenstein, and Von Bulow, in whose hands the music of the pianoforte has attained a marked development. In fact, while the Italians attained pre-eminence in vocal, the Germans have far surpassed them in instrumental music, and have attained a depth of expression, and a wonderful unfoldment of the possibilities of melody and harmony in this field, which have raised the art of music almost to its summit of possible achievement. It is somewhat remarkable that Germany, in which the art of painting was so long neglected, should have so greatly progressed in the art of music. It seems to indicate that this latter art appealed particularly to the German mind, as the best fitted for the artistic unfoldment of its peculiar cast of thought. Indeed, there is something significant in the history and character of the three arts of sculpture, painting and music, to which we may again allude. Sculpture, the art best adapted to the representation of physical form, and least to that of mental expression, gained its highest development in ancient Greece. Painting, in which form and expression are more evenly balanced, has gained its great unfoldment in the modern world, but mainly in the south, the home of quick but not of deep emotion. Music, in which form ceases to exist as an element, and expression reigns supreme, was neglected in the ancient world, gained its earlier and lighter unfoldment in the south, and culminated in the north, the home of the deeper emotions. It is the art in which the eye ceases to exert a controlling influence, and in which the intellect and the feelings alone take part, and it naturally developed most fully in that soil in which the human intellect has greatest depth, and where the study of the profundities of thought most fully replaces that of the harmonies of form.

As to the modern development of the minor arts, we have no space to speak. It will suffice to say that they have kept pace with the nobler sisterhood described, and have flowered out into a diversity of method and an intricacy of combination far too great to be here considered. Nor can anything be said as to the future of art. Whether its development will be checked by the scientific and utilitarian spirit now prevailing it is too soon to decide. There is little reason, however, to think so. No such decline is visible in the fine arts of literature, but rather an evolution of the deeper shades of thought and feeling which we cannot but think will be the future pathway of all art, as it grows less and less a servant of the eye, and more and more a medium of the mind.

CHAPTER XXII.

THE EXPANSION OF SCIENCE.

IN science, as in certain of the fine arts, we have to deal with conditions that belong almost wholly to the modern world. Science, in its modern sense, scarcely existed in that world of the past of which the Athenian civilization was the culminating point. It began there, indeed, in the teachings of Aristotle and some few others of the practical thinkers of Greece. Yet it took no root in that alien soil, but quickly migrated to the more favoring clime of Alexandria, while Athens to its latest day of activity remained a centre of speculative thought.

The practical and the imaginative divided between them the mentality of the ancient world, and reason confined itself to furthering the affairs of ordinary life, or to the unfoldment of philosophical conceptions, and scarcely entered its true field, that of widening the boundaries of human knowledge, which has become such an absorbing pursuit in modern times. In consequence, the great intellectual productions of that era were works of the imagination, the exercise of the reasoning faculty was mainly confined to ideal concepts, and the logical activity of the ancient mind was wasted in the empty labor of making "bricks without straw." This ancient condition died out in the west with the rise of the Christian dispensation.

It culminated in Greece, while Rome formed the intermedium between it and the modern world. But in the far east it has been more persistent, and has extended down to our own day in two marked examples. These are the great nationalities of China and Hindustan. In both of these the intellectual culmination was reached at a period nearly contemporaneous with that of Greece. But it has been succeeded by no new phase of intellectual growth. On the contrary, a steady decadence has set in, and the mind of both these nations has stagnated in the dead pool of past thought. China is the practical past, India the imaginative past, transmitted intact to our own age.

Science existed in embryo in the world of the far past. It had its infancy in the days of later Greece, its childhood in the Arabian period, its adolescence in the centuries succeeding the Middle Ages, and is to-day in the prime of its early manhood, looking forward to a glorious maturity in the near future. Before reviewing this process of development, it is desirable to consider more exactly what is included in the word science. It requires, indeed, a twofold definition, since it is composed of two separate constituents. One of these is exact observation of the facts of nature. But observation has its two purposes. It may be devoted to the improvement of the industrial condition of man, and to the less selfish purpose of widening the scope of human knowledge. The former is its industrial, the latter its scientific phase. The former has in view man's physical needs, the latter his mental unfoldment. Scientific observation occupies this latter field. It collects facts as elements of human knowledge, and thus constantly widens man's mental conception of the universe. Observations of this character form the foundation stones of science, the groundwork on which all its higher labors must rest. But the collection of the facts of nature is by no means the whole of science, despite its great importance. For science, in its complete sense, adds to observation the results of reasoning. It embraces classification and induction. The observation of facts and their interpretation are, indeed, very closely related. Every higher effort of classification indicates more clearly the relations existing between the substances and energies of nature, and enables us to comprehend more fully the laws and principles under which the elements of the universe are bound into coherent wholes. Thus, while observation lays the foundation, generalization builds the edifice of science. The one gives us the facts, the other their laws and connecting links; and by the union of the two we are gradually arriving at a conception of the universe as it actually exists; namely, as an immense aggregate of varied substances and conditions, which are organized into one great whole through harmonious relations and controlling laws, some localized in their action, others more general and wide-embracing, and others of universal extension. Among the greater of these laws already accepted may be named those of gravitation, of heat equilibration, of the persistence of force and substance, and of the correlation of forces. Others, as that of evolution, seem destined to make their way into general acceptance, and it is quite possible that nature may eventually prove to be organized under the influence of one grand general principle of which all yet discovered laws are minor elements.

Science, then, may be defined as the critical observation of facts, and the logical induction of general laws from these facts, with the sole object of increasing human knowledge. All secondary objects, all employment of scientific conclusions to advance human interests, are not scientific processes, but belong to the category of the industrial arts. They constitute a combination of the arts and the sciences which has proved of the utmost advantage to mankind, but which has no bearing on the progress of science itself.

The earliest phase of perceptive science seems to have everywhere been, so far as we are aware, the observation of the stars. Astronomy, which began as religion, progressed at a remote period into science. Such seems to have been the case in Egypt, where stellar observation early led to a conception of the length of the year, and finally to somewhat complex devices for the adjustment of the reckoning of time. In the other primitive nations astronomy made some slight progress, but it appears to have gained what we may fairly call a scientific unfoldment only in Babylonia, in which land, at a remote date, considerable attention was paid to the movements of the stars, the phenomena of eclipses, etc. Royal observatories were established, the stars were named and numbered, and a calendar was formed, more than four thousand years ago. To the Babylonians we owe the divisions of time into the year, month, week, hour, minute, and second, and of the heavens into degrees, the only difference from existing reckoning being in the arrangement of the months. Twelve months, of thirty days each, were employed, with an intercalary month every six years, and whenever else necessary. Eclipses were carefully recorded, and an empirical knowledge of their periods of succession was attained. Observations of comets, of planetary conjunctions, of lunar longitudes and changes, and other astronomical phenomena were made, and in this one direction science gained some steps of advance.

In other directions we know comparatively little of the real scientific progress of the early nations. There must have been some degree of mathematical skill, as is evidenced in their astronomical results. In Egypt the science of geometry made some progress, while chemistry and metallurgy, medicine and surgery, were actively studied. Yet withal science continued in its embryo stage, and the world progressed to the opening of the Grecian period with very little knowledge of the less apparent facts of nature, and with no indication of an effort to trace nature's laws.

Indeed, the activity of the imagination acted as a check to that of observation. It was so much easier to build a world out of invented ideas than out of observed facts. Thus, though the higher phase of scientific activity, the generalizing faculty, came early into employment, it was confined to the deductive, and failed to embrace the inductive process of thought. Men sought to arrive at the facts of nature through a pathway of ideas rather than at the principles of nature through a pathway of facts. Philosophy preceded science. The reasoning of the Hindu sages wrought out of purely ideal material the great doctrine of emanation. That of the Grecian sages wrought out of similar material various systems of philosophy, from the school of Thales down to that of Plato. Some of these, indeed, approached the scientific standpoint, in that the reasoning professed to be based on observed facts; yet they were but inverted pyramids, the facts a slight supporting point, the deductions a broad upreaching mass. It was not until the days of Aristotle that a vigorous effort was made to build the pyramid in its proper form, as a broad basis of facts supporting a converging series of deductions.

The system which Aristotle thus inaugurated was no easy one to develop, and we can comprehend the preference of the unfolding human mind for imaginative concepts. In the scientific process there was necessary as a preliminary to any valuable conclusion a laborious collection of facts, tedious experiments, and interminable observations. Energetic and active-minded as Aristotle was, he could make but a beginning in this work, and his efforts to generalize proved failures only less complete than those of the speculative philosophers. This, however, was not the fault of his system, but arose from his lack of material. It was due to his hasty effort to generalize on a slender foundation. But the failure of his inductions did not carry with it that of his method. The collection of facts was actively pursued by his successors. Yet the system never took deep root in Athens, where the philosophical tendency was too active to permit the existence of a rival. Science quickly made its way to the more fertile soil of Alexandria, and Athens continued the home of rhetoric and speculation until thought itself almost vanished in the gloom of the Dark Ages.

It is to the foundation of the Museum at Alexandria, by the successors of Alexander, the Ptolemies, that the scientific system inaugurated by Aristotle owes its ancient development. The taste for scientific observation which he had awakened, and which was actively pursued by Theophrastus and others of his disciples, became the ruling passion in the minds of the learned men who made their home within the walls of this well-endowed institution, with its magnificent library, its botanical garden, its menagerie, and its scientific instruments. Here were gathered astronomers, chemists, and geometers. Here the science of anatomy was favored by free opportunities for dissection. Here were abundant advantages for the study of nature, both animate and inanimate. It was, in fact, the first definitely organized institution for the promotion of human knowledge, and it gave an impulse to science which was never afterwards suffered to die out.

Within the sheltering arms of the Museum was perfected the valuable work of Euclid, the geometer, which still holds a place as a text-book in our schools. Contemporary with him was Eratosthenes, the astronomer, geographer, and mathematician, who did an amount of valuable work that was simply extraordinary, considering the time. He was the first who attempted to estimate the size of the earth from the direct measurement of a meridian arc. At the same period lived Archimedes, the Syracusan, whose geometrical and physical works have made him famous above all his contemporaries. Among his important discoveries were the method of determining specific gravity, the relation of the volume of a sphere to that of its circumscribing cylinder, and particularly the true theory of the lever.

The geometrical labors of Euclid were worthily carried forward by Apollonius, and the astronomical discoveries of Eratosthenes by Hipparchus, to whom we owe the discovery of the precession of the equinoxes, of the first inequality and the equation of the centre of the moon, together with many minor achievements. He was also the author of that theory of epicycles and eccentrics which so long ruled as the supreme generalization of astronomy. It was presented to the modern world by Ptolemy, whose astronomical work, the *Syntaxis,* maintained its ground in the schools of Europe for fifteen hundred years. This astronomer distinguished himself particularly by the discovery of the second inequality of the moon, and its explanation on the theory of epicycles. He also gained fame by his masterly discussion of the planetary motions, and by works on geography, optics, and other scientific subjects.

The science of medicine was not the least active of those pursued at Alexandria. This science, indeed, was of older date in Greece than most of the others, and received an important impetus from the valuable studies of Hippocrates, 400 B. C., while the other sciences were still overwhelmed by metaphysics. The school of Cos, in which Hippocrates taught, was actively rivaled by the school of Cnidos, which continued in existence till the period of Constantine. Yet medicine did not gain a satisfactory footing until the establishment of the Alexandrian school, in which, for the first time, human dissection was freely permitted. Herophilus, and his colleague Erasistratus, earnestly cultivated the science, and made many important steps towards a knowledge of the structure and physiology of the body. These discoveries were afterwards extended by the labors of Galen, the celebrated physician of Pergamus. Finally, through the intermediation of learned Jewish and Nestorian physicians, the medical knowledge of the Greeks was directly transmitted to their successors, the Arabian scientists.

Rome was as devoid of science as it was of art and philosophy. It was content in all these fields of thought to absorb the work of the Greeks, to which it added nothing of value. The remarkable credulity of Pliny may give some idea of the state of the exact sciences among this people, with whom, on the contrary, the practical arts of law and politics made such great progress. Medicine was almost the only science that continued in active existence, and this rather in the hands of the Greeks than of the Romans. The Byzantine period was still more devoid of scientific progress. In fact, the four or five centuries of study of science in the Alexandrian schools and elsewhere were succeeded by a general decline, and by the re-establishment of metaphysics as the only worthy province of human thought. In the last days of mental activity in Alexandria we find the lectures on philosophy of Hypatia replacing the scientific activity of the preceding age, while two centuries earlier Plotinus, the promulgator of Neoplatonism, emerged from the schools of Alexandria to spread his mystical system throughout the Roman world.

Science, indeed, had arisen almost as an excrescence on the age of philosophy, and died out again before the active inclination to imaginative thought. It had its next awakening in that remarkable efflux of the Arabian intellect which succeeded the declining activity of ancient thought. In the rapid intellectual development of the Arabian people, after their brief career of proselyting conquest, the philosophy and the science of the Greeks seemed particularly adapted to their mental constitution, and were pursued with an earnest energy greatly out of proportion to the importance of its results. In science, however, they made more real advance than in any other direction, since diligent observation cannot fail to yield useful results, even where equally diligent thought is wasted on an empty round of baseless speculations. The literary productions of the Arabian authors in some respects resembled those of the Chinese, in their voluminous dictionaries and cyclopedias, their histories, chronologies, and topographies. But they displayed an activity in the field of scientific thought of which the Chinese were nearly devoid, and did much to develop the discoveries of the Alexandrian observers. Works on every scientific subject were produced—as zoölogy and botany, mathematics and statistics, agriculture, geography, and chemistry. Medicine was diligently prosecuted, particularly by the Jewish subjects of the caliphs. Pharmacopœias were published, chemistry was applied to medicine, and surgery was cultivated. The use of the Indian numerals enabled the Arabian mathematicians to make marked progress in this line of thought; algebra was greatly developed, and mathematical astronomy much advanced. The obliquity of the ecliptic was determined with considerable accuracy, and the approximate size of the earth ascertained from the measurement of a degree on the shore of the Red Sea. While the Christian schools were teaching the flatness of the earth, the Spanish Arabians were inculcating correct ideas of geography in their schools by the use of globes. Among their more important scientific discoveries may be mentioned the optical works of Alhazen, who discovered the true theory of vision and the functions of the retina, explained the results of refraction, and determined the probable height of the atmosphere to be about 58½ miles. He also showed the relation between the weight and the decreasing gravity of the atmosphere, explained the principles of hydrostatics, studied the theory of the balance and the action of gravity, determined very accurately the densities of many bodies, and among his many important investigations advanced in a crude form the theory of the evolution of man from the lower animals.

From the Greeks the Arabs obtained the principles of geometry, and from the Hindus the science of algebra, but in these they left their predecessors far behind. In their hands spherical trigonometry was greatly developed, and quadratic, and even cubic equations were solved. The neglect of anatomical study, through their religious horror of dissection, fettered the progress of medicine, and rendered it mainly empirical, while their surgery, though often bold and successful, was imperfect. Botany and chemistry were chiefly studied in connection with medicine, yet both made considerable progress, and in the latter the properties of acids and alkalies, the sulphates of several of the metals, the process of distillation of alcohol, and many important chemical substances, such as phosphorus and several of the strong acids, were discovered. In short, the scientific labors of the Arabians were exceedingly valuable in their results, and in their hands perceptive science made very considerable progress beyond its ancient state, and was handed to the modern world of Christendom in a condition highly favorable to its rapid subsequent progress.

Science, up to this point in its development, was mainly that of observation. Inductive science had yielded little of permanent value. The Arabian discoveries continued in the state of isolated facts, little or no effort having been made to trace their connecting principles. Such was not the case with the more imaginative Greeks, who were vigorously speculative, but whose theoretical views have rather hampered than aided modern scientific induction. The epicycle theory of astronomy long checked thought in the direction of the true theory. The geocentric hindered the development of the heliocentric doctrine of the relations of the spheres. The physical speculations of Aristotle were based on imperfect knowledge, and yielded false conceptions of astronomical conditions, of the constitution of matter and the phenomena of organic life, of physiology and anatomy, and of all the broad range of subjects with which his investigations dealt. In short, the metaphysical method of interpretation was only less strong in him than in his countrymen, and he seemed to feel it as necessary as did the earlier philosophers to offer a complete theory of the universe. With his handful of material he built more hugely than the modern scientist ventures to attempt with his mountain of facts, and his theoretical erections long remained as stumbling blocks in the pathway of later thought. To conclude this dissertation, we may say that the modern world of Christendom inherited from the Greek and Saracen thinkers an extensive volume of useful discoveries in the perceptive domain of science, while in the theoretical domain it received numerous false conclusions, and scarcely a single one that has stood the test of modern thought. With this preliminary consideration we come to the review of modern science, which has principally been the work of the last three or four centuries.

The thinkers of the ancient world had done more than to make the preliminary scientific discoveries above mentioned. They had removed science itself from the domain of fetichism, and endeavored to give a natural interpretation to the phenomena of the universe. The long sustained method of explaining all natural energy as the work of a conscious soul in each separate portion of matter, they replaced with the idea of an unconscious force. The movements of the planets, once imputed to the action of a guiding intelligence in each; the electrical energy, ascribed to a soul in amber and iron; the movements of aërial gases, each regarded as spiritual in its nature; and numerous similar theories were very differently interpreted by the physicists of Greece, and much of the rubbish of old thought was swept away by them to leave a clear field for the edifice of modern science.

Two of the most important sciences, astronomy and chemistry, were long pursued, and even many important discoveries made, under ideas derived from the fetichism of the far past. Astrology, indeed, has had an abnormally long period of existence in human thought. It began in early Babylonia, and has not yet quite died out. The astronomical labors of the Babylonian star-gazers were mainly intended for astrological purposes. To cast a horoscope and to predict the weather were their impelling motives, and nearly all their observations were made with these ends in view. The same object ruled strongly in all the early nations, and was a prominent feature in Arabian astronomy. In the modern world it has shown considerable activity, and even such great observers as Tycho Brahe and Kepler were deeply infected with its conceptions. The idea that the lives of men are controlled by the movements of the planets, and that prediction of future events can be made from a close observation of the planetary relations, held its own in common estimation until a century or two ago, and still has adherents among the ignorant population.

Chemistry, in its turn, was equally furthered by the researches of the alchemists, whose search for the "philosopher's stone," which should turn base metal into gold, and for the "elixir of life," which should make youth eternal, kept hundreds of hoary searchers engaged for years over their stills and crucibles, and led to many important discoveries. This practice of alchemy, like that of astrology, had its origin in the ancient world. But it gained its full development among the Arabians, who actively sought among the gases and the changing elements of the laboratory for those magical substances that should enable the explorer to transmute common things into gold, and give himself eternal life for its enjoyment. This baseless fantasy attracted the learned men of the Middle Ages with equal force, and led to many complex and long-continued investigations, to which we owe the discovery of numerous chemical substances. It, like astrology, has only died out within a century, and thus science has but now fairly rid itself of the fetichism which so long controlled its progress.

These two lines of search brought astronomy and chemistry early into the field of modern science. There was one marked difference in their progress. That of astronomy was bitterly opposed by theological influences, while that of chemistry was left quite unfettered by the church. There were astronomical views in the Bible which the priesthood felt it incumbent upon them to sustain, while, fortunately for the chemists, their science was not born till after the biblical ages, and met with no opposing texts. The first contest of science with the church was over the question whether the earth or the sun is the centre of the planetary system,—or of the universe, as then maintained. The heliocentric theory had been promulgated in Grecian times by Pythagoras and Philolaus. But it was not clearly proven until the days of Copernicus, whose work, in which the true movement and relations of the earth were first demonstrated, was published in 1543. Copernicus fortunately escaped from the consequences of his boldness by death, but Bruno, who advocated his theory, and taught further that space is infinite, and that the fixed stars are also suns, surrounded by planets, was burnt alive by the

Inquisition, in its stern effort to repress heretical views.

The further progress of astronomy was remarkably assisted by the discovery of the telescope, in the early days of the seventeenth century. This was immediately brought into the service of astronomy by the celebrated Galileo, by whom numerous important discoveries were made. In his "System of the World" the Copernican theory was strongly advocated, a boldness unfortunate to the daring author, whose whole remaining life was made miserable by the persistent prosecutions of the Inquisition, which followed him to the grave. But this strong arm of the church, though it delayed the progress of the science, might as well have attempted to stop the revolution of the earth on its axis as to prevent the movement of thought in the human mind. Kepler, a contemporary of Galileo, succeeded in relieving astronomy from the last fetters of the old epicycle hypothesis, and by his capital discoveries—that the orbits of the planets are elliptical, that equal areas on the plane of their orbits are described in equal times, and that the squares of their periods are proportional to the cubes of their distances from the sun—he finally put astronomy on that solid basis which is the foundation of its later development. As to the character of the more modern discoveries, and the names of the great men involved, we have no space to speak. The progress has been simply extraordinary, and man has made wonderful advances towards a correct knowledge of the universe in which he lives.

But in addition to the triumphs of observational astronomy, it is necessary to allude to its equal triumphs in the theoretical field, and in particular to the supreme generalization of Newton, the foundation of the wonderful development of mathematical astronomy in later years. In all the productions of the scientific mind there is none that can be fairly compared with the *Principia* of Newton, which, considering the undeveloped state of mathematics in his day, stands among the works of thought like the great pyramid among the works of architecture, as the most stupendous product of the reasoning powers of man. In it is advocated and worked out that law of gravitation which has so remarkably explained all the movements of the heavenly bodies, and which retains its pristine strength despite all efforts to dislodge it. That it may not eventually be replaced by some still more comprehensive law cannot be declared, but this will hardly be done by any of the theories which have more recently been advanced. In addition to this grand generalization may be named that known as the "nebular hypothesis," first propounded by Kant, and fully worked out by Laplace, in which we have the first definite promulgation of the modern doctrine of evolution, as concerned in the birth and growth of the spheres. This has failed to gain as firm a footing as the theory of gravitation, and seems likely to be replaced by a more generalized theory, now being worked out by astronomical mathematicians, that of meteoric aggregation; but the evolutionary idea involved in the nebular hypothesis must be the basis of any acceptable theory of the universe.

If we come now to the consideration of the terrestrial sciences, we meet with some important steps of progress in the later period of the Middle Ages. Albertus Magnus, born in 1193, was an active observer in botany and chemistry, in both of which sciences he made valuable discoveries, which the ignorance of his day imputed to the work of magic. The name of his contemporary, Roger Bacon, is much better known in the annals of science. He described the properties of lenses, and has been credited with the invention of spectacles. He proposed the propulsion of vessels and carriages by mechanical means, proved that air is necessary to the support of fire, and advanced many other heretical views in the domain of thought. In consequence of his earnest efforts to promote human knowledge he was accused of magic and sorcery, and languished for ten years in prison as a punishment for daring to advance in thought beyond the canons of the church.

It was at this period that the learning of the past was gradually forcing its way into the European mind, through the influence of the Arabs of Spain and the Greeks of Constantinople, and of the more direct study of the Latin authors. Art had begun its era of development; geographical discovery was gradually extending, and paving the way for the grand enterprises of the fifteenth century; literature was springing into new activity; and science came slowly and dubiously into birth, awed by the terrors of the inflexible Church of Rome. Yet thought could not long be repressed. The strenuous efforts to inhibit it seemed to provoke new and stronger heresies, until the religious reformation shook the fetters from the mind of man, and gave a freedom to thought which has never since been lost but has steadily increased until now the very word heresy has almost fallen into disuse.

Physics advanced side by side with astronomy. Lord Bacon repromulgated the Aristotelian principle, and advocated the doctrine that facts are the true foundation of science, and that the induction of the principles of nature from the results of observation must replace the deduction of these principles from ideal premises. But no impulse was needed from the Baconian maxim; modern thought fell instinctively into the habit of observation. The long reign of the imagination was over, and the human senses came for the first time fully into play as the true aids to thought, while the reasoning powers dealt as actively with the results of critical perception as they had of old done with those of ideal conception. Leonardo da Vinci, born in 1452, added to his remarkable proficiency in art as striking powers in mechanics and science. He long preceded Bacon in the declaration that observation should be the basis of scientific reasoning; and became himself proficient in the sciences of optics, hydraulics, mechanics, and in other directions. Natural philosophy, in fact, made considerable progress in this period, and was greatly advanced by the labors of Galileo, whose most important generalization was that of the three laws of motion: namely, that every body is inert in itself, and changes its speed and direction of motion, or comes to rest, only under the influence of exterior forces; that alteration of motion is from one right line and one speed to another, in conformity with the direction and strength of the acting force; and that action and reaction are equal and contrary, each impelled body repelling with equal energy.

These laws of motion, which remain without question, have been highly valuable aids to the more recent development of physical science, and to the extraordinary advance in mathematics, and have led the mind of man to an exact and broad grasp of the principles of dynamics which could not otherwise have been attained. Their application to the celestial movements formed the groundwork for the demonstration of the gravitation hypothesis, with all its subsequent results, while they have served as valuable a purpose in the estimation of terrestrial motor phenomena.

To undertake any thorough review of the whole progress of modern science would be far too large a task for the space at our command, and we can but hastily run over its leading features. The progress in astronomy, and the promulgation of the laws of motion, led to a great advance in the science of mechanics, in which the principles of the various mechanical expedients were correctly deduced, and many of the general laws of force discovered. In connection with this came rapid progress in the sciences of hydraulics, hydrostatics, and meteorology, the properties of liquids and gases being studied, and the principles of their motor phenomena isolated. Still greater progress was made in the science of chemistry, and a very extensive knowledge gained of the conditions, relations, and combining properties of the elements.

Of the investigations in the sciences just named we may mention those into the pressure and density of the atmosphere, its chemical constituents, the causes of winds and clouds, the properties of a vacuum, the principles of the barometer and thermometer, the origin and characteristics of sound, the action of winds and rains upon the earth's surface, and the influence of the atmospheric gases upon combustion and organic life. Similar discoveries were made in respect to the movements and composition of the ocean waters, their oceanic, aërial, and terrestrial circulations, and the properties of water and other substances in their three states of solid, liquid, and gas. In the much more complex science of chemistry the discoveries made have been simply extraordinary in number, and the degree of human knowledge concerning the physical constitution of the universe has been enormously extended. As the most striking of these may be named the complete breaking down of the artificial barrier formerly raised between organic and inorganic chemistry, and the great degree of chemical identity which spectral research has proved to exist between the materials of the spheres of space.

In immediate connection with these researches into the constitution of matter have been equally energetic efforts to discover the relations and principles of the natural powers. The mighty energies which move the earth and the universe, and which link all nature into one harmonious whole, the forces of light, heat, electricity, magnetism, and gravitation, have been studiously investigated, and many of their most intimate characteristics and relations discovered, until the literature pertaining to these branches of science alone goes far to equal the whole body of literature possessed by the ancient world. In all these directions observation has been closely followed by inductive reasoning, and deep advances have been made into the domain of nature's principles. The activity of the modern mind in this direction led, indeed, to a great variety of crude and incorrect hypotheses, made in advance of the discovery of a sufficient body of facts. But these have one by one fallen before the steady progress of observation and experiment. All the sciences named have made their way over the dead bodies of defunct theories, which in their time were deemed all-sufficient explanations. In chemistry theory after theory has given way, and been swept out of the path of the science. In optics the emanation hypothesis has been replaced by that of undulation, which in its turn is being assailed by that of ethereal stress. In electricity the doctrine of two fluids has been replaced by that of one, and finally by that of no fluid. In heat and magnetism equal revision and replacement of theories have taken place; while in all these sciences certain capital discoveries have been recently made, which rank among the most noble achievements in the history of thought. The old idea, indeed, that heat, light, electricity, and magnetism are ethereal substances, each distinct in character, and each peculiarly affecting ordinary ponderable matter, has been replaced by the valuable discovery that these force agencies are really separate modes of motion. It is now perceived that motion constantly affects the minute particles of matter, and that under varying conditions the external effects of this motion likewise vary, to the production of four dissimilar force phenomena. It is also perceived that these motor forces are reciprocally convertible, so that heat, for instance, may be successively changed into light, electricity, and magnetism through certain changes in the conditions of matter.

From the discoveries just named have arisen some of the most potent and far-reaching of scientific theories, such as those of the conservation and correlation of the forces, and the indestructibility of matter and motion; or more simply, the doctrines that the quantity of matter and the energy of motion in the universe can never be reduced or increased, that the special activities of motion are interchangeable, and that any addition to one of these activities, such as heat, must be accompanied by a loss in some of the others, as light, electricity, or magnetism. These intricate researches into the nature and variation of force have led to a far deeper acquaintance with the intimate constitution of nature. The doctrine of atoms, originally propounded by some of the Greek philosophers, but as a mere guess, has been placed on a firm foundation by chemical studies, and various ingenious theories have been propounded as to the innate constitution of an atom. To this may be added the doctrine of the existence of molecules, composed of one or more atoms, as the smallest integral constituents of matter. These molecules are conceived to be in incessant motion, and it is held that the external phenomena of matter are largely due to these motions.

Another highly important field of scientific study has been that of the investigation into the conditions of the earth as a sphere, the physical characteristics of its surface, and the geological constitution of its interior. The latter has led to a volume of highly complex and interesting facts, by which it has been clearly proved that the surface of the earth as it now exists is the product of a long series of evolutionary changes, in which the material of mountain-covered continents has been incessantly worn down and deposited in strata at the bottom of the seas, to be in their turn converted into stone, uplifted into dry land, and, in many cases, again worn down and reconveyed by flowing water to the seas. Throughout this incessant process, continued for unknown millions of years, one steady movement of evolution appears to have existed, namely, that of a gradual refrigeration, with its varied consequences. We are thus borne back in thought to a period in which our solid earth was a gaseous sphere, the seat of intense heat, which it was rapidly radiating into space. Through the continuance of this radiation the surface gas first became converted into the liquid, and eventually into the solid state, while the subsequent transformations in this solid crust are clearly revealed to us in the facts of physical geology. How far this solidification has proceeded forms another earnest subject of human study, whose results have gradually varied from the conception of a thin solid crust, with an immense and highly heated gaseous or liquid interior, to that of an exceedingly thick crust, or of a completely solid sphere. Certain significant conclusions drawn from the phenomena of tidal action have recently led to the doctrine that the earth is solid to its centre. The question, however, is still an open one, and, like all the unsolved problems of science, has given rise to a great diversity of opinions.

This ancient evolution of the earth, from the state of a gaseous sphere to its present condition, directly links itself to the nebular hypothesis of astronomy, of which it forms one of the main evidences. Thus the doctrine of evolution has become the ruling one in respect to the formation of the spheres of space, as we shall see is also the case in regard to the phenomena of organic life. It is this which we have next to consider, the various sciences embraced in the comprehensive word biology.

The science of geology, in fact, is quite as deeply concerned with the evolution of life as with that of matter, and its palæontological are its most interesting phenomena. Almost throughout the whole range of the stratified rocks the remains of animals and plants have been discovered, many of them of surprising form, and there is every reason to believe that an immense series of other living beings have vanished and left no trace of their existence, what remains to us being but a few tattered leaves from the great volume of life. This loss has been most marked at the beginning of the book, perhaps largely from the lack of solid material in most of the primitive animals. However that be, the first positive traces of life embrace a great variety of specific forms, including members of nearly all the sub-kingdoms of life. From that period forward there is evidence of a gradual progression. The vegetable kingdom has moved upwards from simple algæ through the developing phases of the fern, the palm, and the exogen, with all the intermediate forms of plant life, in a line of steady development. In the animal kingdom a like gradual improvement appears. From the varied series of forms with which life, as so far traced, begins, a steady succession of higher forms follows, which, in the vertebrate series, progresses from the fish to the batrachian, the reptile, the bird, and the mammal, and eventually to man, as the summit of the organic series. In the succession of these forms traces of evolutionary progress are abundantly manifested, and of recent years indications of direct change of species into species have been found, so that the evidence from geology is strongly in favor of that evolution hypothesis which exists as the latest great generalization of science.

The biological sciences, which we have still to review, have made a progress equally extensive with that of the sciences of inanimate nature already considered. In botany an immense number of facts have been discovered, the anatomy and physiology of plants widely studied, their relations determined, and classification has made great progress. In zoölogy, a similar course of study has been pursued, though with less complete results, from the fact of the far greater diversity in animal than in plant forms, and still more from the highly complex anatomical and physiological conditions of animal life, as compared with the far simpler conditions of vegetable organization. This organic complexity of the higher animals has immensely broadened the field of biological science. Anatomy and physiology have been succeeded by the sciences of histology and embryology, in which, with the aid of the highly powerful microscopes now employed, and the improved methods of preparing tissues for study, great progress has recently been made. It is in these two directions that zoölogical science is now most active, and through their aid our knowledge of the true relations and the correct classification of animal forms is making decided progress. It may be added that the doctrine of evolution has been greatly strengthened by the results of embryological and histological study.

As to the names of the great scientists to whom is due this rapid progress in the discovery of facts and principles, they are far too numerous to attempt to give, since for every man that attained scientific eminence in Greece, or in the mediæval era of Europe, we should need to name a thousand of equally meritorious thinkers of the last two centuries. We shall therefore conclude this hasty review with a recapitulation of the sciences specially relating to man. All the sciences embraced in zoölogy of course include man also, but there are others in which man alone is concerned. Of these may be named archæology, ethnology, and philology, or the study of the primitive works of human art, of the race varieties and the distribution of man, and of human language, in itself a very extensive and complicated domain of science. In addition to these should be named the equally important studies in social, legal, political, and historical science, through which the true and rational constitution of human society is being gradually worked out, and the just relation which each man should bear to his fellows slowly evolved from the bewildering confusion of past and present conditions.

Finally, as the summit of the tree of science, psychology needs to be named, and some reference to the progress in this direction made. The study of the mental conditions of mankind was one of the most active of those pursued by the Greeks. Yet their progress was not great, and it was left to the modern world to unfold the constitution and relations of the human mind. Physicians and metaphysicians alike have made this one of the important branches of their line of study, and the classification of the mental faculties made by the latter has been paralleled by extensive researches into the relations of mind and body made by the former, until now cerebral physiology and anatomy have become important fields of science. What the final result of these researches may be it is difficult to declare. As at one extremity of the human sciences strong efforts are being made to prove that man is a direct descendant of the lower animals, so at the other extremity equally vigorous efforts are being made to prove that the mind is a direct descendant of the body, and exists only as the highest resultant of material energy. It may here be said that the former of these theories is supported by a far greater body of ascertained facts than the latter. That the mind is closely related to the body is evident. That it exists only as a temporary resultant of organic motion is far from being as evident. The remarkable phenomenon of consciousness comes in here as a dividing line between mental and physical science. Until its immediate dependence upon material evolution can be shown, the annihilationists must remain in the minority. As yet, it may be said, consciousness stands apart, beyond the reach of physical science, a mysterious condition which no probe can reach and no dissecting knife anatomize, the seeming doorway to a broad spiritual world, which begins where the physical world of the human senses ceases, and which may stretch interminably away into depths unsearchable by human eyes.

This rapid review of the sciences, which has but indicated their broader fields and more striking points of advance, is sufficient to display the fact of the remarkable activity of the modern mind in this direction, almost infinitely surpassing that of the ancient world. Such is not the case with the other intellectual methods. In art and imaginative literature the mind of Greece attained a great development, whose results remain unsurpassed in quality, though not in quantity. In science, on the contrary, it continued dormant, yet rather from lack of desire than from lack of ability. The energetic growth of the imagination dwarfed all other intellectual development, and science made but a few weak and feeble steps of progress as compared with its bold and rapid modern advance. This was in no sense from any deficiency of reasoning powers in the Grecian mind, but from the want of a proper appreciation of the true domain of reason. The Hindus and the Greeks alike displayed deep-reaching powers of logical analysis, but neither race perceived the necessity of a solid groundwork for the exercise of the reasoning faculty. In consequence, they built stupendous edifices of thought on ideal premises, utterly insufficient to bear the weight laid upon them. In the modern world, on the contrary, it is clearly perceived that a firm foundation of facts must be laid down as a basis for the structures of thought, and to this perception is due the solidly based scientific philosophy of recent times, in contradistinction to the metaphysical philosophy of the past.

The avidity in the search for facts, to which this growing scientific tendency has given rise, has yielded a bewildering accumulation, which is being added to with increasing rapidity, so that great libraries are now needed to preserve the records of the results of observation and experiment. Particularly within the present century has this knowledge of the conditions and forces of nature augmented, and passed from a crude observation of the mere external conditions of substances and organisms to a deep-reaching analysis of their fundamental relations, which has laid the sensible world open before our eyes almost to its lowest depths. This research has been aided by instruments of the greatest power and most delicate adjustment, and by the discovery of improved methods of preparing material and of experiment, together with a wide knowledge of the sources of error which vitiated many older observations. The great precision and delicacy thus attained have greatly increased the trustworthiness of the later results of science. To this may be added the extraordinary acuteness of recent mathematical analysis, and the many improved and intricate mathematical expedients, which have proved such highly useful aids in testing the value of discoveries, and in giving correct ideas of the true relations of the phenomena of force and motion. From all this research there has, as above said, accumulated a bewildering volume of facts, so exceedingly numerous, diverse, and involved that one stands aghast almost at the very thought of handling and putting into definite shape this immense collection of scientific material.

Yet it must be borne in mind that a fact of nature has little value to the world of thought in itself. These facts are the loose bricks and other materials from which the true edifice of science is to be built. Of themselves, flung in a confused heap together, they are of minor importance. It is only when placed in their true relation to each other in the edifice that they become of use, as integral parts of that ideal temple of nature whose stability as a whole may be threatened by the omission of a single important fact. For if we look at the mission of science in its full bearings we quickly discover this, that its purpose is to obtain a correct mental reproduction of nature as it exists. None of the facts of nature are isolated. They are all definitely combined, under the control of great laws and active forces, which in their turn subdivide into many minor laws and energies. Every thing and every action bear certain relations to all other things and actions, energies of attraction and repulsion here unite and there divide, and the great structure of the universe is built up of innumerable minor parts, no one of which can possibly escape from its relations to everything else that exists.

Thus science has but begun its work when it has isolated a great mass of facts. It has taken the edifice of the universe to pieces, as it were, and heaped up its elements in the magazine of a scientific library. To complete the work these elements must be placed together again in the mind, in their true relations as they exist in the external world, and the bonds of law that link them together must be recognized and fully appreciated. Only in this way can a mental reproduction of the physical universe be attained, and this is the true purpose of the labors of scientists. To this end the work of the observer and the experimenter must be followed by that of the classifier and the reasoner, and generalization complete the work began by specialization.

Classification is the first step in the process here outlined. To arrange the facts of nature in their natural order and in accordance with their true relations, is the primary duty of the logical scientist. It is to place the bricks in the building in their proper sequence, as they exist in the edifice of the universe. This has been no light task. It has proved by no means easy to discover the true relations of the elements of nature, and innumerable errors have been made in tentative efforts to re-erect the edifice in the mind. The attempt to arrive at a correct classification is still being diligently prosecuted, and is gradually progressing from its early crudity towards an appreciation of nature's true relations. It is to this effort at classification, or arrangement of the isolated elements of nature in their actual relations, that we owe the most striking generalization of the present century, that of evolution; for it has become strongly apparent, and is growing constantly more apparent, that all things, organic and inorganic, are related in consecutive series, and that the whole universe, so far as it now exists and comes within our ken, is the result of a steady growth and development; in which, from a state of extreme disintegration, higher and higher degrees of integration have successively arisen, until man has appeared as the summit of the almost infinite series. Of the steps and the connecting links of this long growth, many have vanished, yet enough remain to satisfy the great body of scientists that such has been the true course of the development of the universe. This idea of evolution is more and more strongly influencing the systems of classification, so that it is rapidly becoming the main effort of the logical scientist to fit every new fact into its proper niche in the great pyramid of intimately linked conditions which ascend from the primitive nebula to the concrete world of man.

But classification, all-essential as it is, is not the final duty of the scientist. The realization of the laws and principles which control and bind together the vast array of nature's materials is the step necessary to complete the work, and to build a true counterpart of the universe in the human mind. The law of evolution is but one of these great laws. Vigorous efforts have been made to discover the others, and numerous false steps made on the road towards truth. As science now exists it includes a great body of such laws of relation and principles of combination, many of which seem so thoroughly in accordance with the facts of nature that they probably represent actual conditions, while many others, though of great use in the organization of facts, are open to question, and may eventually be replaced by deeper and more wide-embracing principles. Such is the standpoint of the science of to-day. It has made enormous progress beyond the crude fancies of a few centuries ago, but every door which it opens reveals vast vistas beyond, and, much as has been done, we have obviously advanced but little beyond the threshold of the great temple of nature, whose deeper recesses must be left for the thinkers of the future to explore.

CHAPTER XXIII.

THE PROGRESS OF EDUCATION.

EDUCATION is not an element of civilization alone. It has existed in some form during the whole human period, and may be traced in the habits of the lower social animals, among which efforts to instruct the young in the duties of mature life have often been observed. This is the characteristic of the educational processes in savage and barbarous ages. The young are taught the arts of industry and war, but there are no organized methods of instruction, nor is there a designed effort to develop the mental capacity of the child. Yet education even in this crude state is of high value, and as developed and widened by civilization is of supreme importance. For its effect is to place the child, on its entrance into maturity, in possession of all the mental stores of its race. The young man, if fully instructed, begins life with all the knowledge to which his predecessors had attained, and is in a position to make new steps of progress in mental development. There have been implanted in his mind facts and ideas which the world has taken ages to reach, and which represent the best work of the noblest minds of mankind. Education, in this sense, has been a most vigorous agent in the evolution of the human intellect. Even now, when the scope of knowledge is so great that it is impossible for any one mind to grasp the whole, or even more than a minor portion of it, it is still possible to give the child the cream of human knowledge, and implant in its unfolding mind the highest ideal conceptions reached by human thought. That this is done can scarcely be said. There is a great waste of effort in all systems of education as so far devised, and much useful time is employed in the infusion of useless matter into the young mind. Yet education, like all the arts, is rapidly developing, and getting rid of the waste lumber of old methods with encouraging rapidity. We may fairly hope that in the near future the useless elements of study will be separated from the useful, and the natural expansion of the young mind through the infusion of valuable ideas succeed to its artificial dilatation through the forcing in of ill-digested facts. The teaching of facts is, of course, to a great degree a necessity; yet the unfoldment of the mental powers is the great purpose to be achieved, and this is slowly growing to be the main object of educational systems.

The thinkers of mankind, in all early ages, naturally gravitated to the priesthood, which included within itself every kind of intellectual ability. And to the hands of the priests the education of the intellect was long confined. In fact, the priesthood held on to this powerful lever for the movement of mankind with a vigorous grasp, which even yet, in some civilized nations, is not relaxed. It is greatly to this, indeed, that must be ascribed the permanence of many religious systems, since their tenets are implanted, through education, too firmly in the minds of the young to be easily eradicated in after life. Had it not been for the priestly control of education it is evident that the progress of religious development, and with it the general enfranchisement of the human mind, would have been much greater than it has been. Priestcraft is innately conservative, and though a certain slow advance takes place within its ranks, this is far less than that which has manifested itself in schools in which no rigid system of belief has been taught. Only in highly civilized communities have science and education separated themselves from religion,' and the consequence has been a rapid growth of heretical opinion, which has forced an advance of ideas within the church, though it must be said that the latter still hangs persistently in the rear of the steady onward movement of secular knowledge. Free thought must ever win in the race with thought that is fettered and clogged with antiquated ideas.

Of the educational systems of the earliest civilized nations we know next to nothing. The learning of the priesthood, and the activity in literary pursuits, in Egypt and Babylonia, are sufficient evidence that some intellectual education was given the young; but this was doubtless mainly restricted to the children of the higher classes, who were instructed in the scientific attainments and the complex theology of these nations. The highest education was confined to the children of the priests and the sons of the king. The Egyptians had made some important steps of progress in observational science, and the schools of the priests had a reputation which attracted intelligent foreigners to their shores. Reading and writing, though probably little more, are believed to have been taught to Egyptians of the common rank.

Among the civilized peoples of the Western continent intellectual education had made but little progress. With the Peruvians it was strictly limited to the children of the Inca race, it being a favorite maxim of the Incas that "science was not intended for the people; but for those of generous blood. Persons of low degree are only puffed up by it, and rendered vain and arrogant." The instruction given consisted in a knowledge of the laws and political system of the country, of the Inca dialect, the religious rites, and the manner of using the *quipu,* the Peruvian implement of literary record. In Mexico some degree of education was given to all ranks of the people. But this was mainly in manual, military, and religious duties. The higher intellectual education was reserved for the children of the nobility, and for those devoted to the priestly office, to whom all the learning of the land was imparted.

Among the ancient Hebrews the education of the people was principally restricted to family instruction. A knowledge of the art of reading, and instruction in the laws of Moses and in Hebrew history, seem to have been general. Mention is made of the schools of the prophets, but we know nothing of their character. Education was viewed as a religious duty, and after the captivity there was developed a system of parochial schools, in connection with the synagogues, in which all the rabbinical lore was taught. In ancient Persia the interests of education were controlled by the Magi, or priests of the Zoroastrian creed. There was no general system of national education, but the people were instructed in the simpler elements of knowledge, and the higher classes in military and political duties, while the superior learning of the nation was confined to the novitiates of the priesthood. Education seems to have been principally physical and moral. The duties of truthfulness and justice were earnestly inculcated. The system of ordinary education is briefly summed up by Herodotus in the following words: "Their sons were carefully instructed, from their fifth to their twentieth year, in three things alone: to ride, to draw the bow, and to speak the truth." A natural consequence was that high reputation for truthfulness which distinguished the Persians among the nations of the ancient world.

We have next to consider the actively intellectual people of Hindustan, with whom thought replaced action elsewhere, and learning was the supreme interest of the state. But this higher learning was the sceptre of power of the Brahman caste, and was sedulously kept from the reach of the people. The interests of education were exclusively in the hands of the priests. Elementary education, probably reading, writing, and arithmetic, as still taught in the popular schools, was generally given. Students seeking a higher education were divided into exoteric and esoteric classes. The former, comprising the children of the three upper castes, were taught language, poetry, the various sciences, the popular religion, law and medicine. It is doubtful if they were instructed in the higher philosophy and mathematics. The esoteric studies were confined to Brahmans who had received the second consecration of the order, and who gained by this esoteric education their third consecration as priests and sages. These studies were very severe, and covered a period of from twelve to twenty years. They included the highest knowledge of the Hindus, and the study and exposition of the sacred books. The great influence over the superstitious populace which this control of the religious rites and doctrines gave the Brahmans is still held, but is weakening through the same cause that gave it strength—that of education. The elementary schools of the Brahmans, in which the people are firmly grounded in the faith, are now rivaled by numerous mission schools, of English foundation, and by institutions of higher learning, in which the strength of Hinduism is being sapped at its root, and the lore and the ideas of the progressing people of the west are taught to the children of the long dormant east.

In China the lack of an organized priesthood, and of vigorous theological influences, freed education from the trammels which checked its advancement elsewhere. Education is, and has long been, in the hands of secular instructors, mainly composed of the students who have failed to pass the severe governmental examinations for official positions. Great attention is paid to learning, instruction beginning in the family, at the age of five or six, and continuing in the numerous schools, with which the country is abundantly supplied. In these the arts of reading and writing are taught and the study of the ancient authors begins. The higher school system is organized on a very interesting principle, and the inducements to study are so strong that many ardent students pass their whole lives at school, in earnest endeavors to obtain one of the high rewards which the government offers to the successful student. The political system of China is largely based on the principle of the superior worth of knowledge, and a series of examinations is maintained, to whose graduates are open the highest official positions of the state. Colleges for instruction in the higher learning exist in most of the large cities. Of these the most important is the Imperial College at Pekin, to whose graduates some of the offices of the state are immediately open. Elsewhere three successive examinations are held, graduation from the lower two of which gives to the successful applicant the right to fill the less important governmental offices. But the scholars who successfully pass the very severe final examination, held every third year at Pekin, receive the highest honors, and are looked up to with admiration by the whole people. They are entitled to appointment to the most important offices under the government.

It might be imagined that this well-arranged and long-established system, which offers higher inducements to study than can be found elsewhere in the world, and through whose action education is almost universal among the male population of China, would result in a great intellectual development, and place the Chinese in the mental vanguard of the world. Yet its influence is vitiated, partly by the corruption which has crept into its management, but mainly by the strict conservatism of the people, the required subjects of study being such as act to hinder rather than to aid intellectual progress. In fact, from childhood upwards, no text-books are put into the hands of Chinese scholars but the *Nine Classics,* the works of Confucius and Mencius and of the still earlier sages of China. The competitive examinations are entirely devoted to themes taken from these works, and to essays written upon them, and ability to memorize is the loftiest aspiration of a Chinese scholar. The consequence is that the highest grade of Chinese scholarship is the one best calculated to unfit its possessor for the duties of the active world that surrounds him, and he grows hoary in the study of the ancient literary treasures of his people, while supremely ignorant of matters of common lore which are the subjects of daily study to the school-boy of the west. Nor does it appear that the one great merit of these ancient works, the high code of morals which they embrace, has had its natural effect on the Chinese mind. They are studied as literature only, if we may judge from the inharmony between their ethical precepts and the ordinary Chinese practice; and the effect of this system of education has been to dwarf the minds, without definitely improving the morals, of the Chinese people.

This review of the educational systems of the less advanced civilizations leads us to that of Greece, in which country education attained its highest development in the ancient world. There were in this land two marked and widely different educational systems, that of Sparta and that of Athens, the former the highest outcome of the ancient physical, the latter of the ancient mental training. Under the system instituted by Lycurgus in Sparta the state took entire control of the education of the child; but its object was merely to make a race of soldiers, and while the development of the body, and the mental qualities of cunning, fortitude, and patriotism were closely attended to, the intellectual training of the mind was almost wholly neglected. In Athens, on the contrary, while the culture of the body was earnestly pursued, that of the intellect was deemed equally important, and every effort was made to develop the youthful mental faculties. Attica was the one land in which education was completely free from the trammels which checked its progress elsewhere. The lack of a strongly organized priesthood threw the interests of education into the hands of the people, and there was little or no theological hindrance to the inculcation of every kind of heretical opinion. The fact that Socrates, one of the most earnest heretical teachers of Greece, suffered death for his opinions cannot well be compared with the incessant persecution of free-thinkers elsewhere, and Greece, with her one martyr to opinion, stands at a high level in the rank of races of liberal thought.

This freedom from theological influence was attended by an equal freedom from conservative control. Homer, whose works formed the classical literature of Athens, gained no authoritative influence over Greek thought, and the admiration accorded him was in no sense mingled with worship. The mind of Greece continued unfettered either by theological or literary authority, and the freedom with which education was permitted in every direction was undoubtedly a principal cause of the extraordinary development of the Grecian intellect. Education here first fully escaped from the hands of the priests, and the highest instruction was open to all classes of the community above the slaves. The results were similar to those which arise from the secular instruction of the present day, and were such as to make us sorely regret the long control of education by a bigoted and conservative class. Had the various elements of human opinion been freely held and freely taught in all ages, mankind would to-day have attained a far higher level of intellectual development, and the world would be far in advance of its present condition.

In Athens public schools were instituted for the children of all classes, and every father was required, under a severe penalty for neglect, to teach his children the two useful arts of reading and swimming. Education was continued in schools of a higher grade, under state control, in which the study of writing, grammar, music, and the works of the poets was combined with active gymnastic training. Private instruction of a superior character was to be had from the sophists and rhetoricians of the earlier period, and in the schools of philosophy of a later date. We have no record of the characteristics of college life in ancient Athens, but numerous inscriptions on marble tablets remain, many of them lengthy, which relate to the education of the *Ephebi*, the youths who were just entering manhood. In the earlier days the education of this class was compulsory, from the ages of nineteen to twenty-one, but was limited to military instruction. Later it ceased to be compulsory, the time was decreased to one year, aliens as well as citizens were received, and the military and gymnastic training was added to by instruction in the schools of philosophy, to which the youths were led by their rectors or masters. For religious training they were taught to reverence the guardian deities of the state.

We know of no public buildings for their use, except the *gymnasia,* which in all Greek towns formed the educational centres. Public lecturers sought these buildings, philosophers discoursed in them, in some of them libraries were collected, and intellectual and physical training went on together within their walls. In regard to the subjects of study of the Ephebi, there seems to have been a catholic freedom. Their rectors led them now to the lecture halls of the Stoics, now to the Platonic, now to the Aristotelian, without dread of the diversity of opinions they might gain, and it is probable that many of them, after their brief period of school life as Ephebi, continued to attend the lectures of the philosophers. We know nothing of what elementary education may have been given in the schools, as preliminary to the higher philosophical course. But the records of Athenian culture indicate that this higher education was principally confined to rhetoric, philosophy, and religious speculation. There were, however, important schools of medicine; literature and art were carefully taught, and for a limited period valuable scientific instruction was given in the school of Aristotle.

Among the first teachers of the higher elements of culture we distinguish the wandering Sophists, who occupied an important position as educators of youth, and did much to break down the existing habits of thought, and to produce that disturbance of ideas which necessarily precedes any mental progress. They promulgated no system of their own, but they questioned the validity of all previous systems, and cleared the ground for the new edifice of thought which quickly arose on the ruins of the old. With them may be named the Rhetoricians, from whose schools sprung the celebrated orators of Greece. In lineal succession to the Sophists came the remarkable figure of Socrates, who resembled them in his negation of the old learning, but differed from them in that he replaced it with a new system. To him the conditions of nature were unimportant in comparison with the conditions of the human mind, and in his teachings education first entered the broad field of psychology, and escaped from its preceding close devotion to material subjects.

The era of Socrates was followed by that of the later philosophy of Greece, which developed within the century succeeding his death, and which held an autocratic control of the human mind for nearly two thousand years. There were four schools of this later thought: the Platonic, the Aristotelian, the Epicurean, and the Stoical. Of these the first was opened by Plato, the ablest disciple of Socrates, in a garden which he possessed in the grove known as the Academy, where he quickly became surrounded by a large circle of distinguished scholars. Aristotle, the most famous of these scholars, opened a school called the Lyceum, where his promenading lectures along its shady walks gained for his sect the name of the Peripatetic. Here he gave popular instruction in the evening, but in his morning lectures instructed his advanced pupils in the profoundest problems of philosophy. In like manner Epicurus opened a school in a famous garden in the Keramicus, and Zeno, the founder of the Stoical system, in an institution known as the Porch.

The schools of these celebrated philosophers were long continued, under a series of teachers who were the accredited successors of the original founders, and for centuries they remained the most famous institutions of the higher philosophical learning in the ancient world. They were conducted without any definite system. Scholars chose their own course of reading and study, which they discontinued at pleasure without examination or degrees. There was no state endowment nor fixed charge, though most of the philosophers accepted presents, and some of them exacted fees. Students crowded their lecture halls, both from the rich and poor classes. Theophrastus had at one time as many as 2000 pupils.

Yet it was only in philosophy that the schools of Athens held the supremacy. Elsewhere, under the Roman empire, numerous schools sprang up. We have already spoken of the scientific and literary schools of Alexandria, with their professors salaried by the Ptolemies. In Rhodes was a famous school of rhetoric, in which Cicero gained a portion of his education. Asia Minor also possessed noted schools. In Gaul there were important colleges, in the cities now known as Marseilles, Lyons, Autun, Treves, and others. Education in Rome itself quickly progressed after the introduction of Greek learning, the higher branches being mainly taught by Greek professors. Vespasian, near the close of the first century A. D., sought to make Rome a rival of Athens as a seat of learning. He was seconded by Adrian, who founded the Athenæum, with professors of rhetoric and language. Antoninus Pius added a professorship of philosophy, and founded institutions on the same model throughout the empire. A similar, but far more illustrious institution, was established by Constantine at Constantinople, which, in the fifth century, had thirty-one professors, mainly in rhetoric and language.

Under the early empire the schools of Athens suffered a decline, but they rose into prominence again under Hadrian and the Antonines, with the latter of whom first began the system of state endowment. Certain of the lecturers became recognized professors, and the system merged into a legally established university. There was, however, no intellectual progress. The teachers resumed the old name of Sophists, but had become rhetoricians rather than philosophers. Yet the schools were fully attended, and the more famous professors were well paid for their labors. But, according to the evidence of Longinus, all vitality had gone out of their teachings, and they did little more than repeat the worn-out doctrines of the past. They professed to teach ethics, metaphysics, dialectics, astronomy, medicine, etc., but these were rather names than studies, and speculation replaced research.

Yet the Athenian schools, on their second revival under Constantine in the fourth century, regained all their old fame, and were visited by scholars from the whole Roman world. The city became a true college town, in which we hear of wild pranks of the students, fights with townsmen, riots between the adherents of rival teachers, and brawls of every description. There was little left of the life of the old city but its university course, and within the walls of the colleges the paganism of the past feebly continued its long fight with the growing force of Christianity. Finally came the edict of Justinian, A. D. 529, which forbade anyone to teach philosophy or expound the law at Athens. This blow was hardly needed to close the dying schools, which had pursued a checkered existence for nine hundred years in the noblest city of the ancient world.

The interests of education, lost from the world of Greece and Rome through the joint invasion of bigotry and barbarism, first regained vitality in the Mohammedan empire; and it is unquestionable that to its numerous and wisely-conducted schools this new civilization owed its long-continued intellectual supremacy, and much of its remarkable literary and scientific activity. After the schools of Greece and Rome had vanished from existence, and while Christian Europe was plunged into the mental gloom of the Dark Ages, the Arabian empire alone kept kindled the torch of enlightenment, and served as an intellectual bridge between the old and the new worlds of human history.

Soon after the establishment of the empire public schools were connected with every mosque, in which the children of the poor were taught to read and write, and instructed in the religious tenets of the Koran. Libraries were formed in all the chief towns, and the elementary schools were soon succeeded by academies, in which superior instruction could be obtained. This school system rapidly developed, colleges devoted to special studies arose, and by a combination of those in the principal cities universities were formed. In the most flourishing period seventeen of these universities existed, reaching throughout the Arabian empire. That of Cordova in Spain was the most famous, and for centuries ranked as the highest institution of learning in the world. It is said to have had a library of 600,000 volumes. Among the subjects taught may be mentioned grammar, geography, astronomy, astrology, chemistry, alchemy, mathematics, and medicine. But the universities proper were chiefly occupied with theology, jurisprudence, and speculative philosophy; natural science being taught in special schools, and medicine in the hospitals. It had been the custom in early Arabian days for young students to make a literary journey, for the purpose of attending the lectures of distinguished savants, but after the foundation of the universities these became the centres of all the higher education.

Arabian education was, to an important degree, free from theological control, and it was not even an absolute requirement that the teachers at the universities should be of the Mohammedan faith. The highly liberal opinion was held that the learning of a man is of more public importance than his special religious opinions. In accordance with this view several of the more important universities were under the control of Jews, and Haroun Alraschid gave to John Masué, a Nestorian Christian, the general superintendence of his schools. In addition to the university studies mentioned there were given lectures on the Arabian classical literature, while rhetoric, composition, and other subjects connected with the practice of literature were taught. From the Arabian schools came several of the customs yet in vogue at our own colleges. Among these was the holding of commencements, at which the graduates displayed their proficiency by the reading of poems and the delivery of orations suited to the occasion.

While the Arabian empire was thus attaining a flourishing state of literary culture and educational development, Christian Europe lay in a mental gloom that was irradiated with scarcely a gleam of learning, while the interests of education were at their lowest ebb. The mountain chain of the Pyrenees separated a state instinct with active and enlightened civilization from nations plunged into the depths of barbarian ignorance and rudeness. Of the great imperial academies of Rome, those of the cities of Gaul had perhaps attained the highest efficiency. Their activity continued to the fifth century, when they vanished before the invasion of the Frankish tribes. In the days of pagan Rome the Christians had either taught their children at home, or sent them to the pagan schools. The first Christian school of higher learning was that of the Catechists, established at Alexandria in 181 A. D. Here theology was taught, in connection with logic, rhetoric, ethics, and the sciences. Of this institution Origen was the most eminent master. Other schools followed, in which the Bible was the principal text-book, while the sciences were only taught in so far as they were related to theology. In the west the pagan schools, after their suppression, were succeeded by priestly institutions, limited to the instruction of those who designed to enter the church. Schools for elementary instruction also existed in connection with the monasteries.

In 470 A.D. Martianus Capella published his *Satyricon,* a work which continued for one thousand years the principal text-book of Western Europe. In it was propounded that division of learning into the "seven liberal arts," which so long remained current. These seven arts were subdivided into the *Trivium* (grammar, dialectics, and rhetoric), and the *Quadrivium*, (arithmetic, geometry, astronomy, and music). But these high-sounding divisions were mere names, signifying almost nothing, and from the sixth to the eleventh century the profoundest ignorance prevailed. The little learning that existed was confined to the monasteries, outside which the mental gloom was unbroken. It is even in doubt whether Charlemagne, notwithstanding his active efforts to aid education, was himself able to write. Abundant testimony might be given as to the widespread ignorance. Contracts were made verbally, or, where a notary could be found capable of reducing them to writing, were incredibly barbarous in style and grammar. The clergy were little less ignorant. In Spain, in the age of Charlemagne, not one priest in a thousand could write a letter. In England, in Alfred's days, the priests were utterly unable to translate into English the Latin of their prayers. In Rome itself, in 992, it is said that not a single person was to be found who knew the first elements of letters. Such is part of the evidence which Hallam has collected.

Much of this ignorance resulted from the scarcity of books, which could only be had at an enormous price. The capture of Egypt by the Saracens had cut off the supply of papyrus, while parchment, the only writing material left, was too costly to be freely used for literary purposes. Thus it became customary to erase ancient manuscripts in order to obtain material for writing new works, usually of the most worthless description; and many treasures of ancient literature perished in this way. The great libraries, whose existence might have stimulated study and preserved learning, had long before disappeared, and only an occasional manuscript was recovered, for the diligent study and transcription of the Benedictine monks.

A word on these libraries, the storehouses of the learning of the ancients, may not be amiss in this connection. They existed in all the great civilizations of the past world. Voluminous collections of works on clay tablets were established in the great Assyrian cities. These vanished in the exigencies of war, but they fortunately, in considerable part, continued to exist, under the ruins of the destroyed cities, and their highly interesting contents are now being slowly deciphered. We know little of the ancient Egyptian libraries, though there is some evidence to show that they may have been of considerable extent. But the most extensive and valuable libraries were those established during the Grecian period. Of these the most noted and important was that of Alexandria, which is said to have contained about half a million volumes. It must be remembered however, that an ancient roll or volume embraced much less matter than a modern book. This library was nearly all destroyed by fire during the wars of Cæsar. It was replaced by a rival library which had been founded at Pergamus, and which Antony transported to Alexandria as a present to Cleopatra. Of the subsequent fate of the Alexandrian libraries we are in doubt. It is commonly related that they were burnt by the Saracens; but this is exceedingly doubtful, and it is more probable that they had nearly or completely disappeared at an earlier period, during the brawls between monks and pagans, and in the various other troubles that afflicted the old city.

Many libraries were founded in the city of Rome and in the other cities of the empire, some of them of considerable extent. But they all perished by fire or rapine, and of them all only the burnt relics of one still exist. This is the library of Herculaneum, preserved in a charred state under the outflow of Vesuvius. It contains 1,803 manuscripts, of which the 341 that have been unrolled and read have proved of little importance. Constantinople had extensive libraries, one said to have contained more than 100,000 volumes. But they suffered the fate of all ancient collections of books. Of the great library of Cordova, with its reputed 600,000 volumes, all the works of science were burnt in 976, by order of Hisham II., a religious zealot. Yet many valuable works were left, and the library afterwards gained important additions. It was finally broken up, however, during a civil commotion of a later date, and its contents sold and dispersed. In the fifteenth century an immense collection of Arabian books, variously estimated at from 80,000 to 1,000,000 volumes, was devoted to the flames by Cardinal Ximenes, in the Plaza of Grenada. This was a worthy counterpart to a similar barbarity performed in the New World, where another zealous ecclesiastic doomed to the flames a vast heap of Aztec manuscripts, collected from all parts of the empire. Such was the fate of the libraries of ancient days, countless volumes written with infinite labor, and collected with ardent effort, being turned to ashes in moments of rapine or bigotry, or scattered and destroyed by blind ignorance. Of their many thousands of literary treasures only some scattered relics remained, buried in the depths of monasteries, while the world moved on in contented ignorance, and in an almost utter poverty of the intellect.

Some efforts were made to establish institutions of a higher grade than the parochial schools of the priests, but with little important result. The most promising of these efforts were those made by Charlemagne in France and Alfred in England, in the eighth and ninth centuries. The former monarch, on his accession, found that learning was practically extinguished in France. In his effort to establish schools he was obliged to invite strangers to his kingdom, men of no remarkable acquirements, it is true, yet a little light shone far in that dark age. Alcuin of York, Clement of Ireland, and Theodulf of Germany, obeyed this summons, and were engaged to found schools in the different cities of the empire. Alcuin set up his school in the palace, and had the great emperor himself for one of his pupils. In these schools were taught the "seven sciences," in a very imperfect fashion. The studies in astronomy, for instance, were limited to the calculation of Easter, and in music to the chants of the church. The revival attempted by Alfred was no more effective. He was himself one of the most learned men in his kingdom, and translated Bede, Boethius, and Orosius into the Anglo-Saxon. It was his special desire that every free-born child in the kingdom should be taught to read and write, and schools were instituted in many parts of the kingdom as preliminary aids to this purpose. As it proved, however, both of these far-seeing monarchs were in advance of their age, and mental torpor succeeded their death. Doubtless one reason for this was the fact that Latin continued the language of learning, all the literature of the day being written in this classical tongue, so that it was necessary to master the difficulties of the Latin grammar and dictionary before a course of reading could be pursued. In consequence, the learning of the day failed to reach the people, except in the shape in which it was doled out by the priests.

About the close of the eleventh century a general desire for mental improvement began to manifest itself, and this feeling was greatly augmented in the twelfth. The contiguity of the schools of Arabian Spain to Christian Europe probably had much to do with this. Many of the Christian youth made their way to these schools, among the earliest of them being the celebrated Gerbert, afterwards Pope Sylvester II. Gerbert, who died in 1003, is credited with great acquirements in Arabian lore, which he afterwards endeavored to have taught in Europe. But all this is half legendary, and it is doubtful if much Arabian learning reached Christendom at that early date. At a later period, however, the Arabian schools were much resorted to by Christian students, and the influence of these schools on the rise of institutions of learning in Europe must have been considerable. The Arabian philosophers were first translated into Latin about the middle of the twelfth century, and the promulgation of Arabian learning culminated in the first half of the thirteenth, under the patronage of Frederick II., so famous for his liberality of thought and his intimate association with the Sicilian Saracens. These translations were mainly performed by Jewish scholars.

We have little information concerning the early establishment of the schools of the Middle Ages. One of the first of note was that of William of Champeaux, in which, soon after 1100, logic and philosophy were well taught. The reputation of this lecturer was eclipsed by that of Abelard, his famous pupil. To the genius of the latter the University of Paris owed its first rapid advancement. Even after his retreat to the wilderness, he was followed by hosts of ardent students, who crowded enthusiastically to his lectures in the monastery of Paraclete. In fact the desire for knowledge had grown with remarkable rapidity, the mind of Europe having broken the chains of contented ignorance by which it had been so long fettered. Universities were established in all directions, the earliest being that of Salerno, which attained much celebrity in its day. Others were those of Bologna, famous as a school of law, of Montpelier, noted for its medical instruction, and of Paris, which became a centre of theological study. In all no less than twenty-three universities date from the twelfth and thirteenth centuries. Little in praise, however, can be said concerning the general value of these institutions as centres of learning, their main staple of instruction, for several centuries, being that empty round of scholastic philosophy which we have already sufficiently described.

As to the ardor with which this sudden desire for intellectual pursuits was prosecuted, it may be mentioned that Oxford, as early as 1200, is credited with 3000 students, and in the reign of Henry III., a half-century later, with the exaggerated number of 30,000. It is asserted that there were 12,000 at Bologna at the end of the twelfth century, while the other universities seem to have been well attended. The first numerical statement concerning that of Paris, in 1453, gives it 25,000 students; while as early as the thirteenth century this university is said to have had fifteen distinct colleges. This seemingly intense desire for knowledge was, as we have said, mainly directed to the scholastic philosophy, with which the ecclesiastical professors mingled a fair share of somewhat peculiar theology, and it is questionable if much useful development of the understanding was achieved during this long-continued speculative activity of the intellect.

The military class continued almost as devoid of learning as in the earlier period. Knights were instructed in arms and morals instead of letters, and were as notable for ignorance as for military zeal. Many of the nobler knights were unable to read and write. As an illustration of an active literary spirit in despite of a great absence of learning, may be mentioned the songs of the troubadours, in the whole scope of which there is scarcely an allusion or reference which shows the possession of any general information by their writers. They revolve around a very narrow circle of thought, within which little trace of learning intrudes.

Yet knighthood was not without its education, and that of an important and desirable character. This was the moral culture already mentioned, the inculcation of that chivalrous spirit which did so much to ameliorate the manners of the age, and which was certainly no less important than intellectual culture. The education of noble youths in the castles of distinguished patrons, where they grew up in association with the ladies of the household, whom they were taught to honor and revere, and from whom they received lessons in courtesy and chivalry, had much to do with the softening of manners and the growth of clemency, which gradually replaced the brutal cruelty of the earlier times. Loyalty, courtesy, honor, truth, justice, and liberality, with protection of the weak, and gallantry to the fair sex, were the distinctive virtues of chivalry. It cannot be said that the high morality thus enjoined was always or often shown in practice; but it was the standard set by the literature of the age, and the public opinion in its favor must have had a strong influence in inducing knights to strive towards this standard, even if the violence of their turbulent age prevented the most of them from attaining it. The education in courtesy thus instituted long survived the knightly days to which it owed its origin.

From the twelfth century forward the educational impulse took on a new form, in the ardent study of classical literature, which then fairly began. The study of Latin, which had always been the dialect of the church and the language of its literature, became more common among the people, and a genuine revival of the ancient learning was inaugurated. Many Latin poems were written, and the study of the ancient authors must have been active. This declined somewhat during the thirteenth century, in consequence of the activity of scholasticism, but recovered in the fourteenth, the middle of which century became marked by an ardent zeal for the restoration of classical learning. Manuscripts were copied, libraries were founded, and an earnest search for the vanishing treasures of the ancient literature was instituted.

During the earlier period the Greek language had become unknown in the west. Its study began in Italy in the middle of the fourteenth century. Greek scholars at this period frequently journeyed westward, with valuable works, and set up schools in the Italian cities, this movement being greatly enhanced by the Turkish assault upon Constantinople. They eventually made the extant treasures of Grecian literature as well known in the west as were those of the Latin authors. Petrarch and Boccaccio were among the earliest and most earnest in aiding this revival, which had made very little progress before their time. Petrarch remarks that in his day not more than ten persons in Italy could appreciate Homer. The study of Greek in Italy first became active after 1395, when Chrysoloras commenced teaching it. A few years afterwards a rich store of Greek manuscripts, 238 in all, among them Plato and Pindar, were brought to Italy by Aurispa. From this time forward the emigration of learned Greeks to the west became active, the religious prejudice against the language gave way, and during the next century numerous schools of the classics were opened, of which may be specially named that of Vittorino da Feltre, an eminent educator of the fifteenth century. This study of the classics soon extended from Italy to other countries, and a sharp contest was waged between the scholastic and the non-scholastic university courses, the latter eventually winning.

We can hardly appreciate in this day the enthusiastic delight with which the masterpieces of Greek and Roman literature must have been received by the scholars of the Middle Ages. It was like the dawning of a new and sublime world upon their mental horizon. We possess an abundant modern literature, with satisfactory translations of all the surviving classical works; but their home literature was slight in quantity and worthless in quality as compared with the rich stores of ancient thought. And these were only to be enjoyed in the original. No gateway to their treasure-house had been opened through the medium of translation. A severe course of study, in order to acquire the two difficult languages in which their works were couched, necessarily preceded the reading of these noble authors. Yet this labor was not without its reward, in that it established a learned caste, which was looked up to with wonder and reverence by the ignorant public. We can, therefore, comprehend the ardor with which the study of the classics was pursued in the bosom of the universities, and the supremacy which they attained over all other branches of higher learning. Scholasticism, which had held the field for centuries, but the emptiness of whose results was gradually becoming apparent, declined before the growing classicism. Science, whose growth was but feebly beginning, paled before it. In Bologna and the other leading Italian universities an ardent study of law had long ruled supreme, and checked the growth of the scholastic speculations. But this was classic law, based upon the code of Justinian. The result was that Italy became filled with able lawyers, while the study of the classic jurisprudence spread from there elsewhere throughout Europe. In consequence, the earlier legal systems of the western nations were displaced, and the Roman law became the basis of the codes of Germany, Spain, France, and Italy. Such was not the case in England. A system incompatible with the classic jurisprudence had already become established there, and the study of Roman law soon declined, a prejudice arising against it.

The establishment of classical studies as the basis of all the higher learning, in the European universities at the period in question, was a necessary step in the progress of education. The vernacular literature was that of barbarism. Only in the classics could be found the literature of civilization. In those great works were treasures of science and philosophy, art and oratory, the close study of which gave an immense impetus to European civilization, and at once lifted it to a level which it otherwise might have needed many centuries of hard intellectual labor to attain. And the difficulty of the path added to the value of the goal. The labor of acquiring two dead languages was viewed as amply repaid by the charm of the broad intellectual prospect to which it led, and by the exalted position in the regard of contemporaries to which the accomplished scholar attained. Proficiency in other directions was not much regarded unless it was accompanied by a knowledge of the classics, and to this the main energy of the universities was directed. The classics became, and have since continued, the shibboleth of the universities, the rallying cry of college lore.

There is, however, arising a widespread sentiment in modern communities that classicism has reached the position which scholasticism held at the period of its decline. The pursuit of classical lore, indeed, has become little more than a stumbling block in the path of the highest intellectual development. The conditions surrounding it have remarkably changed. With the beginning of the translation of classical authors, the study of the Greek and Latin tongues grew less important. The rapid growth of a valuable literature in the European tongues hastened this decline in importance. In our day the reverse movement has culminated. We now possess a voluminous and highly valuable literature in modern languages, together with somewhat satisfactory translations of all the meritorious ancient authors, so that a general knowledge of literature, sufficiently exact for ordinary purposes, can be obtained without the need of studying the dead languages. While this has become the case, the field of intellectual exercise has immensely widened. Law, medicine, art, science, mechanics, have each become the work of a lifetime, and in the vast majority of cases of university study these modern demands upon the attention of students prevent any really useful acquaintance with the classics. It has become impossible to give to the study of ancient language and literature the single and ardent devotion that was yielded to it in the past. Modern life crowds itself upon the mind of the student, and a large majority of the university graduates emerge from their colleges with a lame, useless, and quickly forgotten half-knowledge of the classic languages and lore. It therefore seems a sheer injustice to the intellect of the age that several of the best years of the life of the student should be devoted to acquiring a knowledge which he is destined to find of trifling value, which he immediately hastens to forget, and whose only real effect is measurably to unfit him for the active modern life into which he is so soon to be thrown. This, of course, does not apply to those with a special aptitude for philological study, who pursue the classics with a purpose to use them in their life labors. But these are hardly one in a thousand, to the natural selection of whom it is hardly desirable to sacrifice the mental development of the remainder.

Yet university conservatism holds on to the classics as absolutely necessary requirements of an education almost as earnestly as do the Chinese scholars to the study of their classics. The latter, indeed, have the better warrant for their faith, since their ancient literature continues more valuable than their modern. This can scarcely be affirmed of European literature, and it must, on the contrary, be admitted that the thought and the grade of civilization embodied in the literature of Greece and Rome are at a distinctly lower moral level than those of the modern world, and that in this regard the effect of its close study is injurious rather than beneficial to the youthful mind. It tends to implant ideas in the intellect of the young which are much below the moral standard of the age, and thus to impede the progress of the higher civilization. As to the theory of superior mental discipline to be obtained from the study of Latin and Greek, and the high importance of appreciating the beauties of diction of the classical authors, these are too puerile seriously to consider. They constitute the last dying effort of classicists to impede the irresistible advance of the world. There is no trouble about mental discipline. Mathematics and science quite suffice for that. And our own literature is certainly not so devoid of beauty of diction that students need stultify their minds in a vain effort to enjoy that of the classical authors.

The system of education to which we have so far alluded was mainly confined to the rich and noble classes of the community, while the masses continued devoid of any education, except such rudimentary instruction as may have been gained from the parochial schools of churches and monasteries. Even this was wanting in the rural districts, whose inhabitants continued in as utter ignorance as in the depths of the Dark Ages. In fact, during the whole history of the world up to the period which our review has now reached, the education of the great masses of the community was of the most elementary character, and often utterly neglected, particularly among agriculturists. And fully one-half of every community, the female portion, was left as a rule devoid of any intellectual instruction. We can trace some slight indication in the past of the education of girls, yet very little attention was paid to it. In ancient Egypt the daughters of the priests probably received some education. Greece yields several instances of learned women, but not among the reputable portion of the community. In that classic land womanly morality was equivalent to mental debasement. In Rome girls received some education, and after the close of the republic there seem to have been schools exclusively for them. In the later empire they were often carefully educated. In the Arabian empire also the education of girls received some attention, which was certainly not emulated in mediæval Europe. To this fact, instead of to any inherent inferiority of intellect, we may with some warrant ascribe the lack of intellectual eminence among women. Not until within the present century has their education approached that of man; not until within the last ten or twenty years has it anywhere equalled that of man; and the fact that some notable results in the way of intellectual eminence are already following these educational advantages warns us to pause until the conditions of mental development have become in every way equal before we venture to disparage the intellect of woman.

The era of the common school dawned much later than that of the university. At the period of the reformation we find Luther eagerly taking up this question. In 1528, with the aid of Melanchthon, he adopted a system of common-school education, known afterwards as the Saxon school system, and throughout his life the education of the young in free schools was one of his cherished projects. The work was ably continued by his successors, and Germany seemed destined to become the best educated nation of Europe. But the outbreak of the Thirty Years' War arrested the development of these schools, though it did not entirely destroy them. Education was also encouraged by Zwingli and Calvin, and flourishing schools were established in the different centres of the Protestant faith. Common schools were advocated by Knox, in Scotland, in 1560. They were established in 1696 in every parish, being supported by taxation and by the parish, and placed under the charge of the kirk. To them is due the general diffusion of elementary education in Scotland.

Of the higher Protestant institutions of learning may be mentioned the gymnasium of Geneva, founded by Calvin, in which were eight distinguished professors of Hebrew, Greek, philosophy, and theology. But the most flourishing of the Protestant intermediate schools was that of Strasbourg, which in 1578 had more than 1000 students. Under the charge of the celebrated John Sturm it rose to celebrity, and exerted a powerful influence in fostering the study of the classics. At the same period the schools of Belgium acquired a high reputation, and the university of Louvain had in 1570 as many as 8000 students.

This rapidly growing predominance of the Protestant schools excited the attention of the Jesuits, who endeavored to combat it by founding an equally efficient school system. Their first school was opened in Germany in 1550. But so actively did they work that in 1700 they had under their charge about 1500 institutions of learning, ranging from the common schools to the university. These were largely devoted to the teaching of the Roman Catholic tenets. Their course of secular study was very narrow. Of the classical Latin authors only Cicero and Virgil were admitted, while Greek studies, with the exception of Aristotle, were confined to the works of the church fathers. Modern languages and learning were neglected. It was a vigorous attempt to impart an education clarified of the faintest tinge of heresy, and it undoubtedly had a powerful effect in arresting the decline of Catholicism.

During the sixteenth and seventeenth centuries some important works were written on education, principally by Comenius, Montaigne, Locke, and Milton, in which was advocated a more natural system than the one then in vogue. It was maintained that nature should be followed instead of being forced, that education should be made pleasant instead of repellant, that harsh discipline should be replaced by gentle management, that undue culture of the memory is not development of the intellect, and that the study of things and words should go hand in hand. Comenius was one of the first to advocate the teaching of science in schools.

These theories, and others which were advanced later, did much to make a radical change in the methods of instruction. A reformation set in during the latter part of the seventeenth, which continued throughout the eighteenth century. In this period three distinct educational systems were instituted, known respectively as the pietistic, the humanistic, and the philanthropic. The pietistic system was inaugurated by August Hermann Francke, about 1695. The system is still in flourishing existence, in the suburbs of Halle, in Germany, where the different schools contain some 3500 children. They are conducted on the general principle that religious and moral instruction should be more prominent than the intellectual. In the schools established under this idea the Greek Testament was the only text-book of the classics, while the study of Hebrew was a part of the course, and the new and peculiar theory was advanced that a change of heart is essential to successful scholarship. Schools on the same general principle were founded by Jansenius in France, and by the Wesleys in England.

In the humanistic schools the principle was advocated that the ancient languages and literature, (which were termed the *humanities*), are the true foundations of education, and should be exclusively studied until the student enters the university. This principle was largely followed in Germany and the Netherlands, and has had its share in the supremacy of the classical idea as still sustained in the higher schools of those countries. During the same period the philanthropic ideas in education promulgated by Comenius, Locke, and others were strongly inculcated by Rousseau. In this system education was to be simplified and study to be made easy and agreeable. It was to begin early in life, and the child brought to enjoy its exercises, the reason being unfolded naturally, and without force or annoyance. And the study of objects was, as far as possible, to supersede that of books. The works of Rousseau, indeed, advanced a complete, though scarcely a practicable, system of philanthropic and naturalistic education, which was put into effect in several German schools. These have not held their own, and only one of them now exists.

An important class of schools known as the eclectic embraced a variety of institutions outside of the special systems mentioned, and particularly those established for the instruction of hitherto neglected persons, including institutions for deaf mutes, for the blind, Sunday-schools, reformatory schools, etc. They included also many schools on special subjects, such as commerce, agriculture, mining, design, and the like, which the growth of educational demands and of advanced industries rendered necessary.

To the ideas promulgated in the systems above named may be added those of the Swiss educational reformer, Pestalozzi, which have had an important influence on the education of the present century. He taught that education must begin early, under the discipline of the home life. It should proceed slowly and naturally, the child being incited to use its own powers, with encouragement, but little direct aid, from its teacher. According to him form, number, and language are the primary elements of knowledge, and arithmetic, drawing, and modeling are as essential as the study of language. The schools should be kept lively and active, and the scholar incited to exercise and reveal his mental powers as fully as possible. Individuality must be preserved and developed, experiment must precede the mental processes, and verbal education be held as supplementary to the education of the senses. The Pestalozzian system has been adopted in the Prussian schools, with little variation, and has greatly influenced the systems of teaching throughout Northern Europe, England, and America. In other countries it has been modified, but not in its essential principles. A later educational idea is that of Frœbel, for the instruction of the childish senses and intellect through the medium of attractive exercises. This has led to the kindergarten system, which is now such an active agent in German primary education, and is spreading so rapidly in other countries. It has given an important impetus to object teaching, by which the kindergarten methods are continued in the more advanced schools.

These considerations as to educational methods lead to a review of the school systems now in use, and of the condition to which education has advanced. It has, indeed, in the present century reached a standard never before attained, unless in the schools of the Arabian civilization: it has become well-nigh universal. The theory is entertained that the prosperity of the state rests upon the intelligence of its citizens, and that no public duty is more essential than that of instruction. In consequence all enlightened states offer opportunities for free instruction, or for education at a nominal charge, to the children of poor and rich alike, and in several states this system has become compulsory, it being justly held that no parents have the right to deprive their children of the essential elements of a primary education.

Yet England and America have deviated from Continental methods in their educational systems as markedly as in other features of civilization. On the Continent education closely follows the Prussian method, of strict governmental supervision of the schools. In England and America education is in the hands of the people, and in great part free from government control. The Prussian school system dates from 1794. Under it all schools, public and private, elementary and advanced, are under the direct control of the government, and are obliged to conform to the system of state administration. Formerly the supervision of the lower schools was largely in the hands of the clergy, but since 1872 there has been an entire separation of church and school, though clergymen may still be appointed school superintendents. The authority of the government is delegated to provincial bodies for the control of the minor schools, but is retained over the higher institutions of learning. In these minor schools low tuition fees are exacted, but they are mainly supported by taxation, and the children of the very poor are permitted free entrance. It is the duty of the state to provide sufficient schools for the instruction of all children from the age of seven to fourteen, the attendance of whom is compulsory. This compulsory system was first established in 1763, by a decree of Frederick the Great. It is now the law in most European countries, and is rapidly extending.

There is a system of constant supervision over all Prussian schools, and a fixed standard of proficiency is vigorously maintained. All teachers must be specially prepared for their duties, and may safely make tuition their life work, since they are pensioned by the government when sick or aged. Teachers in private schools are similarly obliged to pass an examination and obtain permission to teach from the authorities. The universities are directly under the control of the government, by whom their professors are appointed and their support partly provided. The schools are divided into five classes: the Primary, the Burgher, (equivalent to the American high school), the Realschule, the Gymnasium, and the University. Of these the Realschule differs from the Gymnasium mainly in being less classical, it teaching the practical life branches, while the latter is the feeder of the Universities. In addition to these are Normal schools, for the education of teachers, and a great variety of special and professional schools. There is, however, little or no opportunity for the higher education of girls in the public schools, though some cities have institutions for this purpose.

Special attention has been given to this Prussian system, as it is the basis of all the Continental school establishments. The Austrian system is directly founded on that of Prussia. In France also a system of governmental supervision, similar to that of Prussia, prevails. National education in France began in 1833, previous to which date the education of the masses was greatly neglected. Private schools are encouraged, but, as in Prussia, they are under governmental supervision. Religious instruction is given in the public schools, but no creed instruction can be imparted against the wishes of parents. Academies for higher instruction in France answer to the universities elsewhere. The school establishments of most of the other European states are based on the same general principle, the government keeping strict control. In Sweden the clergy still retain the main command of the schools, and much religious instruction is given. The school system of Switzerland bears a general resemblance to that of the United States.

The school system of England diametrically differs from that of the Continent, in that it is almost completely free from government control. There are no schools, except the military, naval, pauper, and reform schools, directly supported and controlled by government. Recently, however, grants have been made to ordinary schools, on the condition that those accepting these grants shall be subject to official inspection. The education of the people, as a rule, is in the hands of the established church and the other religious organizations. In the schools supported by government no sectarian teaching is permitted.

A highly important unfoldment of the common-school system is that of the United States, which was first instituted in Massachusetts and Connecticut in 1642 and 1643. Since then the development of common schools has been great, particularly in the cities, in which a very creditable system of elementary education has been gradually evolved. The schools are initiated by the state governments, but their control is entirely in the hands of the people, through their elected agents. In consequence there is a great diversity in the educational systems of different cities and states. The public schools, though in no sense controlled by the general government, have received very important aid from this source, more than 70,000,000 acres of the public lands having been donated for their support. In some states the proceeds of these lands have been converted into a permanent endowment fund, and so managed that a large sum has been accumulated. The permanent school fund of the different states now amounts to $60,000,000, half of which was the direct pecuniary gift of the general government. The judicious sale of the lands still held may much more than double this large sum, and go far to place our common schools on a solid financial basis.

In regard to the institutions of higher learning in the United States, they present as great a diversity in grade and method as do the public schools. Their utter freedom from supervision has by no means proved advantageous; there is no standard to distinguish between academy, college, and university, and the greatest difference in standing exists between institutions which bear the same general title. In fact the system of the higher education in the United States is greatly inferior to that of Germany. The professional schools do not compare in thoroughness with similar European schools, their courses being shorter and less complete, and their standards of admission and graduation lower. The same may be said of special institutions of learning. Very few of these exist in the United States as compared with Germany and other parts of Europe, where there are very many schools for the study of agriculture, commerce, mining, forestry, surgery, architecture, music, military and naval art, and a variety of other subjects. Thus the United States, though possessed of a valuable system of elementary education, has by no means gained the European level in the higher courses of study, and presents abundant room for progress, and for the replacement of its present confused system by some definite arrangement.

Within quite recent times education has made other important steps in advance, to which brief reference needs to be made. These comprise the introduction of art and industrial training into public schools, and the organization of the latter on more definite and philosophical principles. Of these the particularly new feature is that known as manual training, which has been introduced into the schools of the United States since the Centennial Exposition of 1876, at which were exhibited examples of the work of schools of the same character in Europe. The principle embodied in these schools is of the greatest importance, and its full development cannot but be of the highest advantage to the educational future of mankind. It is that of which we have already spoken, the devotion to subjects of practical importance, and those likely to be of direct use in the life of the man and woman, in preference to those of minor value in actual life. In the mediæval period industrial education in schools was not called for. The mechanical processes were simple and could be easily acquired in workshops, and school instruction was confined to intellectual subjects. But the industrial condition of the modern world has radically changed from that of former times, mechanical processes have grown complex and intricate, and it is becoming perceived that the great army of youths who are destined to take part in the struggle for existence of modern industry are at a decided disadvantage if they lack preliminary instruction in the useful arts. It has grown evident that for a large section of the population education of the hands is scarcely secondary to that of the mind, though it is not as clearly perceived as it must be in the future that the schools have a great variety of intellects to deal with, and that any unvarying system of school instruction must prove to the disadvantage of many. Recognition of this in the higher schools has led to the adoption of elective courses of study, but the public schools continue rigid and illogical in their methods. It cannot well be questioned that only the few are fitted by nature to become scholars, the many being incapable of any advanced scholarship. Of the latter a large percentage are capable of manual dexterity, and fitted to attain valuable development in the mechanical arts. It is this fact which is recognized and provided for in the manual training systems, which are being adopted throughout the length and breadth of our country. These schools are as yet too young for their results to be very apparent, but their promise is high, and as a step towards the educational classification of intellects, and the restriction of students to subjects suited to their natural powers, they are of the utmost importance. This classification and separation must in the future grow more extended, until there shall be schools adapted to every general grade of intellect, and the youth of the coming time shall be trained in the manner best calculated to develop their natural talents and bring out all the good that is in them. And to this, in the future, will undoubtedly be added courses of ethical training, and instruction in courtesy, honor, unselfishness, truthfulness, temperance, and all those principles of conduct which constitute the noblest elements of manhood, and without which the development of the intellect loses half its value.

With this review of the progress of education we may again briefly refer to its influence as an agency in civilization. The effect of education upon the general morals of the community has been very great, as a few statistics will show. In fact the class of convicts very largely comes from the illiterate portion of the community. In 1869, according to Dr. Wines' report, the proportion of illiterate to educated convicts in the prisons of different countries was as follows: In France 95 per cent.; in the county prisons of England 34 per cent.; in Belgium 49 per cent.; in Switzerland

83 per cent.; in Italy 40 per cent.; in the United States 22 per cent. of the totally ignorant, and 50 per cent. of the very deficient. If the total numbers of the illiterate and educated classes of civilized communities be compared, it will appear that the proportion of criminals from the former class is tenfold that from the latter, while the proportion of paupers is sixteenfold. Thus education seems to have a remarkable influence in decreasing crime and pauperism, perhaps largely by increasing both self-respect and respect for public opinion in the community. It also tends to make labor more effective, to repress brutal passions and unreasoning vice, to increase temperance and self-restraint, and to develop habits of economy and prevision. By its unfoldment of the mind it gives a broader outlook into the conditions of life, widens and elevates human interests, and removes man further and further from the kingdom of the brute into the realm of far-seeing intelligence. The desires of man widen with his knowledge, but his wise insight into the best means of attaining them widens also. It needs no great mental unfoldment to prove that honesty is the best policy, and to show that a temperate restraint to-day is the true means to an enhanced enjoyment to-morrow. Thus every step forward in intellectual unfoldment is a step towards that practical morality which is so necessary to the well-being of communities. And in its influence in repressing vicious habits it is equally a step towards the higher virtues. Finally, there are no cheaper enjoyments to be had than those of the intellect, no dearer ones than those of the senses, while delight in books and in intellectual society goes far to

destroy that strong desire for sensual pleasures which is one of the main incitements to crime, and that unrestrained yielding to the passionate emotions which leads to unreasoning acts and deeds of lawless violence.

But if education even in its lower fields exerts this important influence, in its higher reach it has a yet more valuable effect upon the development of civilization. To this effect allusion has already been made in the early part of this chapter, but some repetition of what was there said will not be amiss. The degree of intellectual advancement which any being can make in this life depends largely upon the level at which he begins his individual mental development. If left to work his own way forward from childhood, the chances are a hundredfold that he will end considerably below the highest intellectual level of mankind. But if kept in training until he has gained this level, the chances are in favor of his stepping beyond it, and adding something of value to the mental treasures of the world. The present generation stands upon all those that have gone before it. In body and brain it has inherited noble conditions from its ancestry. And that ancestry has not only provided the working instrument, but the material to be wrought. The mental productions of our ancestral world are enormous. If these were completely swept away, and we left with our acute brains to work them out anew from nature, there would undoubtedly be centuries of lost time. In language, science, art, literature, and a thousand other directions an inheritance of extraordinary value has been left us by our ancestors, the products of the world's labors for thousands of years. Whoever of us can grasp the most of this treasure to begin with is most likely to get high interest from his mental capital, and to leave an enhanced inheritance to coming generations. It is to this end that the higher education leads. When one has gained a knowledge of all that the world has done in a certain direction, his own work at once becomes effective, and every stroke tells. But if his knowledge is but partial and imperfect, he may spend his life in reproducing results which are already the property of the world; like the ignorant inventor who spends his best years in the effort to apply mechanical principles which were in use before he began. Therefore the highest education to the greatest number is the most favorable condition to which civilization can attain, and the progress of the world in educational facilities is of the utmost advantage to the general development of mankind. Its present position in respect to education has very much to do with the rapid modern advancement of civilization, and the growing opportunities for advanced educational attainments to the masses of the community are destined to have a highly beneficial influence upon the condition of mankind in the near future.

But the subjects to which education is devoted are of more essential importance than the mere fact of education in itself. The world is no longer in the condition which it held in the days of ancient Greece, in which it was possible for a man of alert intellect to attain to all the useful knowledge which was then possessed by mankind. Since that period the scope of knowledge has so immensely broadened that it has now become impossible for any one man to gain more than a small fraction of the entire sum. What shall that fraction be? Such is the question which is now of supreme interest to educators. Shall we, like the schoolmen, or the mediæval theologians, spend our lives in beating the bush of empty speculation, and let the live issues of the day slip by unnoted? Happily, education has got beyond this stage. Shall we, like the Chinese, spend our lives in the study of the works of ancient sages, with like disregard of the fact that the modern world of the mind teems with productions of far higher importance? This stage still persists to some extent, in the often sheer waste of time in the classical course of education. But it is dying out with such rapidity that it is perhaps ungenerous to strike at an expiring foe. To what, then, shall the higher education be devoted? Its object should be to put man in the fore-front of time, to lift him to the loftiest summit of the mount of knowledge, whence he may wing his way in higher flights. Since one cannot absorb the whole, even of useful knowledge, to what shall he devote himself? This question is being answered in two ways, one leading to specialism, the other to generalism, in knowledge. The specialist, in despair of grasping the whole, confines himself to some particular province of the domain of learning, often a very narrow one, in which he is able to acquaint himself with all of importance that has been done before him on the subject, and to learn in what direction new knowledge is needed. It is to men of this kind that the world's rapid progress in observational science, art, and invention is due. The specialists are they who have accumulated the enormous mass of facts with which the domain of knowledge is nearly overwhelmed, and to which they are adding with a ceaseless diligence that threatens to bury the world of the mind under the products of its own labor.

The habit of mind of the specialist tends to unfit him for the work of the generalizing thinker, whose highest aim is to fit together the facts which are drawn from the mine of knowledge, and to rebuild the world which the specialist is taking apart brick by brick. The scope of his learning is therefore necessarily wider, if shallower, and his useful work consists not so much in the discovery of new facts as in the employment of those already on record. These two fields of work have been, to a great extent, occupied heretofore by the same persons, but not in the same manner. The generalizing specialist has occupied himself in collecting facts in support of his theories, with little regard to whether they belonged to one or another of the minor fields of knowledge. It is this which distinguishes the work of a Darwin from that of the absolute specialists. Only by gleaning facts from diverse fields was that great thinker able firmly to consolidate his grand generalizations.

But the domain of thought is growing so rapidly that the successful theorizer must in time become content to cut loose in great part from special research, and, like Herbert Spencer of our own day, to work out the principles of nature solely through the aid of facts recorded by those devoted and adapted to original discovery. In other words, the specialist and the theorist must grow content each to fill his separate province, and to work harmoniously together, the one in the discovery of nature's facts, the other in the induction of nature's laws from those facts.

This view does not apply to the work of scientists alone, but to the whole kingdom of knowledge. Every domain of thought may be wrought in the double way mentioned, and by this application of the scientific method to thought as a whole results of the utmost importance may be gained. In all directions experimental specialists are discovering facts. In all directions theoretical thinkers are discovering relations, laws, and principles. And from the mutual labors of these two classes of thinkers the domain of human knowledge is being rapidly pushed out into the infinite kingdom of the unknown.

A division of work is necessary, since it is simply impossible for one mind to obtain a full acquaintance with the whole sum of human knowledge. Yet it may be possible to gain the cream of human information. It is not the total sum of facts that needs to be acquired, but the most vital facts. Accepted truths are of a hundredfold more value than exploded errors. An astronomer must understand the theory of gravitation, but may safely remain in ignorance of the disproved theories of epicycles and vortices. A painter must know the methods of his contemporaries, even if he knows nothing of those of the ancient Greeks. A financier needs to study the modern principles of banking, even if he has no time to study the financial methods of the Middle Ages. A poet needs to understand the laws of rhetoric now accepted, even if he makes no study of those of the past. The mistakes which men have made on their journey towards truth, and which strew their pathway through time, as the bleaching bones of perished camels mark the caravan routes through the desert, are of secondary importance in comparison with the truths that have been safely brought down to our own times.

It is this fact that should be kept constantly in view in education. The best work and the highest results of the human intellect are those which are of most value to the student, and should be particularly impressed upon his mind, even if much of inferior value be necessarily neglected. And it would be of immense advantage to the progress of mankind if an iconoclast should arise in our day like the Chinese emperor who ordered the destruction of all ancient literature. Not that such thorough work as this is desirable, but if from the appalling mass of books the trash could be weeded out and burned, and if the valuable material of thought could be culled from the remainder and embodied in convenient treatises, the labor of acquiring knowledge would be remarkably reduced, and the minds of students be relieved of much useless lumber. It is the truth alone that is useful, and it matters little if all the ladders of approach be thrown down if one can leap at once to the summit of the citadel of knowledge. Such is education's true mission, to impart what the world accepts as truth, or as its nearest approach to truth, with little regard for the rubbish of error which lies on the pathway to truth. It is only from the peaks of discovered knowledge that new and unknown peaks may be perceived. The loftiest height once attained, the pathways up the mountain side may be retrod or not, at the student's will.

It may be said in conclusion that educational methods have made much useful progress of recent years, on the line of object teaching as opposed to word teaching, and the development of the power of thinking rather than that of memorizing. This is the true direction in which educational advancement must take place, and the improvements in school methods now being made are full of promise for the future of education. And these advantages are by no means to be confined to men. The avenues to the higher education, which have long been closed against women, are now being opened with encouraging rapidity, and the time seems close at hand in which the educational opportunities of both sexes will be equal, and women will no longer be exposed to an accusation of intellectual inferiority, which is, wholly or in part, due to deficiency in education.

CHAPTER XXIV.

THE FUTURE AS REVEALED IN THE PAST AND THE PRESENT.

IN the foregoing review of the unfoldment of human institutions we have traversed a long route, leading by many paths from a contracted beginning to a widely diversified end ; or, to use another image, unfolding from the simple germ of savagery to the broadly-branching tree of civilization. Yet, diverse as they are, human interests are so closely related and interwoven that they remain essentially one in all their variety, and civilization may be looked upon as a single organism built up by the harmonious conjunction of many individual elements. It bears a certain analogy to the human body, which develops from a single germ, in which all the possibilities of life reside, to an intricate association of cells, with numerous special duties, yet all dependent upon one another, and each working for the good of the whole.

Civilization has by no means yet reached this happy consummation. Many of its human units are working to the injury rather than to the benefit of others, hostility instead of harmony prevails between numerous constituents of the great whole, and it may be many centuries in the future before society becomes truly an organism, instead of a group of warring individuals. Into this future we desire to gaze "as far as human eye can see," and seek to deduce from what we know of the conditions of the past and present some conception of the conditions of the future.

The principal controlling influences which held man in subjection in the past were two: the power of superstition, which governed him during the long period of barbarism; and the power of military domination, which rose to supremacy as superstition declined. Both of these have died out in the most advanced nations. In the republic of the United States, for instance, neither priestcraft nor kingcraft retains any political control. And yet men are not free. A new power is rising upon the ruins of the old, which threatens again to reduce man to servitude. We have hitherto dealt with the past. Before us lies the future, stretching forward interminably. It is vague and mysterious in its outlines, yet vistas open far into its dim recesses, and down these human eyes may gaze. For ages past the world has wrought for the future. Many lines of thought and action have arisen in human history, some of which have finished their course, others are approaching completion; others still have made but little progress, and some of the latter seem destined to become the powers controlling mankind in the centuries yet unborn. Three such powers can be seen rising successively into view, three energies which failed to gain supremacy at any time in the past, but appear destined to become ruling agencies in the years to come.

We have spoken of the two great controlling powers of the past—superstition and the sword. Mankind now seems to be falling under the control of another great agent of power, the purse, which threatens to become equally dominant. This element of control had its share in the subjection of man in ancient days. The accumulation and the unequal distribution of wealth began long ages ago, and at a remote period men rose in political influence through the possession of money or landed property. But the money power long remained subordinate to its rivals, priestly craft and kingly violence. Only in our own century has it risen to supremacy, and most particularly so in the United States, since in Europe it has still to contend with a remnant of the old aristocratical control, and caste shares dominion with the money-bag.

Intense devotion to business and enormous accumulation of wealth are the most marked characteristics of recent civilization. With this condition the past had nothing to correspond. Industry has been so wonderfully aided by invention, by the devotion of the intellectual energies to the increase of human possessions, and by the employment of scientific skill in the same direction, that the productiveness of human labor has extraordinarily augmented. Commerce has lent its active aid to the dissemination of the products of industry. The study and practical employment of the principles of finance and political economy have aided the process of wealth formation. The destruction of property, so prevalent in the past, has been largely checked. Even war has in great part ceased its devastation. Law is intimately concerned in promoting the security of individual possessions, and in upholding private interests. Education is vigorously turned to questions of material aggrandizement. All the forces of civilization, in fact, converge in this direction, and the accumulation of wealth seems the one great end of man. In connection with this the unequal wealth distribution of old has rather increased than diminished, and the rich are growing richer with startling rapidity. This devotion to money-making, and the magnificent prizes which business offers to the fortunate, have had their influence in awakening the cupidity of mankind and arousing the desire for material possessions in a degree never before known, so that the love of money and the struggle for riches have become the controlling influences of the age.

The worship of wealth, however, has not quite swallowed up civilization. There are other interests and sentiments in existence, some of them powerful and promising, which we shall have to consider. But the question of business relations is the one that comes prominently forward as the most important agency in existing thought and action. Should the present rapid increase and growing governmental influence of personal wealth continue unchecked, it may rise to the position of a strong political power in the near future, and enslave man as absolutely as did the sword in the past. But that these will continue unchecked may very well be questioned.

We have already considered the methods by which the immense individual accumulations of property of the present day have been brought together. They are natural resultants of the extraordinary increase in the world's wealth under existing conditions of industry, and of the prevalence of individualism in industrial relations. All the powers of civilization are at work to promote the unequal distribution of wealth, and illegitimate enterprises find little opposition in law, however much they may be opposed by public opinion. Legalized gambling, the transfer of wealth from hand to hand without an equivalent, has been one of the most influential agents in the modern distribution of the products of industry, hosts of unwary tempters of fortune being annually fleeced of their hard-earned savings to swell the winnings of the daring and unscrupulous magnates of the stock board.

In other cases great private fortunes have arisen through the chance discovery of rich deposits of mineral wealth under lands in which the holders had an equitable claim only to the surface, and the full control of which the government had no right to give away to individuals. Such stores of the precious metals and other underground valuables are justly the property of the people, not of the individuals who have staked out surface claims, and it is only the undue estimate of individual rights which now prevails that has sustained the servants of the people in thus disposing of the mineral treasures of the community.

Such are some elements in the economical condition of modern affairs. It is not only with an occasional very rich man that we have to deal, but the whole tendency is towards the formation of a caste of very rich men. While enormous fortunes are made by stock gambling, great fortunes are accumulating in ordinary business. Immense farms, manufactories, and distributing establishments are the order of the day. By hereditary transmission this accumulation is increasing. It yearly grows more difficult for small business enterprises to succeed. They are overslaughed by the leviathans of trade. The one-man power is coming to the front in all lines of industry. The great railroads, telegraphs, and other large industrial interests of the country are swayed by single men, or small combinations of men, who largely own, and despotically control them. Vast enterprises in the great cities are grasping the lion's share of the retail trade, and seeking to crush out competition. It is the same with the wholesale trade and with manufacturing industries. Monopoly is the order of the day. Combination of monopolies gives greater force to the movement. The very rich join hands to advance their mutual interests, and to make it more difficult for rival enterprises to succeed. Trusts, as they are called, are among the most threatening of recent institutions.

This is the condition reached within a century. Production has become extraordinarily developed. All the forces which aid its growth have gained tenfold vigor. The tendency to the development of great single enterprises and of immense monopolies is rapidly increasing. The hopes of success of small enterprises in competition with these great ones grow yearly less. We may safely look forward in the near future to a considerable increase in the existing inequality of conditions. And with it two other conditions are inextricably bound up. One is the influence of wealth upon legislation, already a crying evil of the day. The great railroad and other private interests sway legislatures at their will, and few demands which they make upon the representatives of the people fail to be complied with. The other condition referred to is one equally inevitable. As the hopes of success in private business enterprises decrease, the people must necessarily fall more and more into the position of employés of the great monopolists.

To what will all this lead, if it is not averted? Evidently to a new division of populations into castes, two in number; one of very rich employers, the other of poor employed, the latter the subjects of the former, not through the force of superstition or violence, but through the hard and unavoidable pressure of the need of food-getting. And the representatives of the people promise to become more and more the representatives of the rich caste, bought with their money, and swayed by them in legislation.

This is not empty speculation, but the direct pointing of the finger of circumstance. The conditions which now exist will inevitably move forward, if not hindered by a popular revolt, or the development of new conditions, to a stage in which a new power will exist in the world, as autocratic and politically supreme as any that has existed in the past—the imperialism of wealth. It will be above the law, since it will control the making of the law. It will tax the people at will, since the profit of their labors will fall into its hands. The people will be its working subjects, not daring to resist its orders. In fact it will possess all the prerogatives held by any autocrat in the past: namely, the making of the laws, and the control of the wealth and the actions of the people. The money king of the future, if the existing conditions develop unchecked, will become as absolute as the Inca of Peru, with all the people working as his industrial subjects, and receiving pay therefor in accordance with his will.

Such is the condition of human affairs which is already partly produced. Will it go on to its completion in the enthronement of money as absolute king? Hardly so, for the sentiment of revolt is already active, and it is by no smooth pathway that wealth is climbing to power. Yet the existence of a spirit of rebellion is not in itself proof that at least a temporary dominion of wealth may not be established. Every despotism of the past strengthened itself in the face of ineffective rebellion, and a similar result is not impossible in the case before us. Revolt in itself is not sufficient to produce revolution. It must be a wisely considered revolt, based on principles adapted to replace the unsatisfactory institutions by superior ones. Such is the story which the past tells us. Thrones have been many times overturned by blind force, but if no better conditions were ready to replace the old ones the thrones were re-established. The mere instinct to destroy an existing oppression, and let the future take care of itself, has never proved effective. The only successful rebellions of the past were those that were undertaken to establish a superior political principle. And by a succession of such wisely-directed revolts modern liberty has been gained.

What principles, then, characterize the sentiment of revolt against the empire of wealth? Two separate rebellions are in fact gathering against it, which may be separately considered. One of these is the communistic movement, directed against inequality of possessions. Its purpose is to level all men to the same grade financially, and establish laws which will prevent any future unequal distribution of wealth. That it can succeed, or that the principle could be sustained if once established, it is not easy to believe. It seeks to reproduce a condition which somewhat generally prevailed upon the earth in the primitive stages of human society, and from which man has ever since been steadily moving away. The inequality of desires, abilities, tastes, and energies which civilization has developed and fostered seems incompatible with an equality of wealth. If forcibly produced, the condition could not be sustained. If produced by legal statute, one cannot perceive how such laws could continue operative, or inequality be prevented from re-establishing itself. Human nature has acquired so great a diversity in character and desires that it is idle to hope that it can be tied down to uniformity of any description, or that relations of property can be established of a character that would act to check the most active of human wishes and ambitions, that for personal possessions and the enjoyment of individual rights in articles of value. Even those working most ardently to establish the principle would often be among the first to break it, if opportunity offered, and in the wide diversity of human pursuits and conditions such opportunities must incessantly arise.

A second revolt is that of industry against financial oppression, and in the outworking of this a greater hope of future amelioration appears. To individual protest against lowering of wages has succeeded united protest, and the combinations of workingmen have increased until, from their original local stage, they promise before long to reach a national stage, a single grand grouping of industry against capital. Yet this in itself would be no obstacle in the way of the establishment of the money kingdom. The parties to this combination do not refuse to be subjects. They simply wish to be well-paid subjects. If their struggle with capital were confined to this line alone failure might well result, since a complete combination of capital would give it the control of the situation, and possibly enable it to dictate what terms it pleased. But the trades-union combinations are adopting other expedients of a more promising character. Some of the capital of the world is in their hands, and more may be. Co-operative industry is the weapon which they wield against the throne of cash. There is a tendency to form minor industrial societies in the midst of the general community, financial republics in the heart of the aristocratic empire of wealth. It is the basic principle of these societies to withdraw themselves from the world in which they live, to manufacture their own goods, support their own stores, buy and sell within their own societies, own their own factories, in short, to separate themselves so far as business is concerned from all dependence upon the surrounding world. The recently coined word *boycotting* expresses the condition to which co-operation tends, and through which it promises to rise into formidable rivalry wlth individual wealth. Its progress hitherto has not been great. Individual business enterprise has been adding to its strength for centuries, and has accumulated capital in enormous masses, while co-operative industry is but half a century old, and is yet hardly past the stage of infancy. It offers economical advantages which cannot but favor a more rapid growth in the future. Hitherto there has been little competition between individual and associated industry, but a severe contest may arise in the coming century. Though co-operative enterprise cannot hope, at least at any time near at hand, to control all productive capital, it may become sufficiently strong to settle the much-debated question of wages and profits, and definitely solve the problem of reward for labor.

There is an interesting analogy, in this connection, between the conditions of ancient and modern communities. The original association of mankind was a vague aggregate of individuals, with no defined limits or strong cohesion. In its midst grew up a series of family groups, strictly defined and strongly coherent, which spread until they embraced all society, and banished the old individualism. Industrial relations to-day exist in an undefined and weakly-coherent state, parallel to that of the primitive association. But in their midst is growing up a series of strictly defined and strongly-coherent co-operative groups, which may in time spread until they constitute the industrial society of the coming age, and replace the modern individualism.

If co-operation cannot control all capital, it may gain the casting vote in questions of wages and prices, and by giving workmen remuneration equal to the full value of their labor, and selling at the cost of production, may reduce profits to a vanishing point, and render individual production too unprofitable to be energetically pursued. In this view of the case, the purposes of the more recent socialists become of importance. It is proposed by this growing body of social revolutionists to make the state a great manufacturing corporation, the owner of all land, tools, workshops, etc., and the employer of all workmen, whom it shall pay in accordance with the full value of their services, the whole industry of each nation being conducted on the principle of no profits and a full reward for service. This movement has made greater progress in Europe than in the United States. In several European nations the government owns and manages the railroads and telegraphs, and is reaching out its hands in other directions. These industries, it is true, are not always handled as efficiently and satisfactorily as might be done by private enterprise; yet this inefficiency is not a necessity of the situation, if we may judge from the economical management of our post-office and some other governmental institutions.

We have mentioned above only a few of the industries which are controlled by national or local governments. There might be added to the list postal carriage of merchandise, governmental savings-banks, municipal control of gas and water works, ship-yards, and foundries and factories for the manufacture of arms and ammunition. These, as a rule, are economically managed, being conducted on strict business principles. Yet, despite the theories of the socialists, it is not easy to believe that all the multiform industries of a nation could be satisfactorily conducted by government. But it seems by no means improbable that government and associated industry in conjunction may in the future become the controlling powers in business relations; the former managing the great, the latter the small concerns. It may be asked, what would be the position of individual enterprise under such a state of affairs? It would certainly not be as active as at present, but it might well play a very useful part. In ordinary matters it would have little opportunity, since it would be obliged to conform to the co-operative rate of wages, and would have little or no margin for profit. But by close economy, reduction of expenses by breadth of enterprise, and the employment of superior processes, individual capital might still obtain a satisfactory reward. And in the manufacture of patented articles, and the application of improved methods, which it would be to the interest of the government to protect, in order to encourage invention, individuals might still be able to accumulate wealth.

Yet great fortunes could scarcely be gained if society were thus organized. Gambling operations in stocks and merchandise must cease if these become government or associate property; mines of mineral treasure will no longer be given away to individuals when government comprehends its true relations to its people; and the laws of inheritance will very likely be revised, so as to prevent the transmission of great estates to single persons by will. In the time to come there may be placed a legal limit to the sum that any individual can receive by gift or will. The history of the future is undoubtedly to be marked by the growth of corporate and the decline of individual rights, and the wealth which any man has accumulated is likely to be distributed, in just proportion, to two sets of rightful heirs: the children to whom he owes parental duties, and the community to which he owes communal duties, and without whose aid and protection he would not have been able to accumulate wealth.

In that coming period other social and industrial conditions must arise. The progressive improvement in machinery will undoubtedly increase the public leisure, since a greatly decreased human labor will suffice to produce the necessary supply. Every man of ordinary industry will be able to live comfortably without exhaustive physical effort. Every man of ability will be able to acquire moderate wealth without that excessive nerve strain which now threatens to destroy the mind and the health of the business community. The fever and chill of modern industry will be avoided,—that succession of abnormal competitive struggle and of panic exhaustion which is one of the attendant features of the present rush for wealth, with its inevitable over-production, fluctuation of value, and business depressions. There will be no lack of luxury, of magnificent buildings, of accumulation of works of art, but they will become less and less personal and more and more corporate property; and the present condition of an occasional person enjoying peculiar advantages over the mass of the community will change to a condition in which some, at least, of these advantages will be enjoyed by a large proportion of the people, and many of them perhaps by the whole community.

Such is the natural outcome of the course of human history. The strong idea of special individual rights, which arose in the development of society, has long been giving way to that of general or communal rights. The personal right of the priest to deal with heaven for the people vanished when the people claimed equal rights of communion with the Deity. The personal right of the king to rule the people has vanished in those lands which have established the principle of equal political rights. The personal right of the magnate of wealth to control the industrial community must similarly vanish when the principle of equal rights to the common wealth is established. No communistic leveling need follow the establishment of this dogma. Ability will still rule, as of old, in the religious, political, and industrial world; but it will rule as the representative of the people, with authority derived from the people, and with no remnant of the old prescriptive right to the control of the people.

And this ability must be that of intellect alone. Inherited claims to wealth and power must vanish. And when once the claim to power by right of birth, so long sustained, is definitely set aside, men can make their way into public positions only through the force of intellectual adaptation to those positions. As the love of money and the nervous strife for its possession become checked under new conditions of society, and business interests grow less absorbing, the developed mental activity of mankind must bring some other ruling agency into prominence, and the character of this agency is clearly revealed in the present condition of enlightened societies. Intellect is to become the next monarch of mankind.

We have traced the successive rise to power of many of the elements of civilization. The greatest of them all, the force of pure intellectual ability, divorced from the other sources of influence, has still to be considered. Throughout the whole history of civilization it has been a powerful agent in human control. It has many times been seated upon the throne. It has many times usurped the throne. It has vigorously aided the priest and the king in the assumption of supremacy. But throughout the period of the past it was in great measure a secondary agent, associated with the vigor of superstition and of the sword, but seldom rising superior to them and ruling through its own pure energy. In one nation, that of China, the principle of the ruling supremacy of the intellect is in a measure established, but as subordinate to, not superior to, the rule of hereditary right and physical force. In Greece, for a short period, it rose almost to a complete supremacy. At other periods in the history of mankind it gained supremacy during the life of a single man, though never without the aid of the elements of forced subordination of mankind. In the present day intellectual ability is coming into the foreground with an unprecedented rapidity. Thought is growing supreme over action. The men whom the world now admires are not its powerful rulers, but its great thinkers. Before the names of Sir Isaac Newton and Shakespeare those of the Plantagenet and the Stuart kings of England sink into insignificance in public estimation. The leading names to-day in England are those of Darwin, Tennyson, and other great thinkers, not those of Victoria and her ministers. The admiration for great thinkers is, of course, confined to the intellectual and educated class, but this class is increasing with remarkable rapidity. Education is becoming universal, and the masses are being more freely admitted into the temple of knowledge. The press is tenfold more active than ever before. Books and newspapers are pouring forth in extraordinary abundance. And they are made for use, not for show. The reading public has increased until it embraces the whole community, and there is a steady improvement in the character of the works read. From Dick Turpin as a hero the public is rapidly advancing to the appreciation of such persons as Shakespeare, George Eliot, Dickens, and others of the same grade as heroes. The rapid development of imaginative literature in quantity and quality is paralleled by an equally rapid advance in scientific literature. The pursuit of knowledge is growing more and more absorbing. Where there was one earnest worker in this field a century ago there are a thousand to-day. And in the minds of these thinkers the love of money is declining as that of knowledge advances. Agassiz well expressed the sentiment that is coming to animate science in his noble maxim: "I have no time to make money."

Such is the condition to which intellectual development has attained to-day. To what it will attain in the future, it is difficult to predict. It is, however, strikingly evident that intellect is the growing power of the world. The older forces have had their culmination and are in their decline. This, indeed, can not be said of the money power, which is still growing, and with a rapidity in close consonance with that of intellectual advance. Yet the positions of the two are markedly different. The money power is growing in the face of a vigorous opposition, which cannot fail eventually to arrest its progress, and force it into decadence. The power of the intellect is growing without opposition, but with the fullest favor, support, and co-operation of all the elements of society. King, priest, and millionaire, merchant, workman, and slave alike favor and aid its growth, and there is nothing to prevent the pursuit of knowledge and the desire for intellectual enjoyment from becoming in time absorbing passions with all the leading elements of the community.

But to the degree that the love of knowledge grows, that of money must decrease. They are sentiments by no means incompatible, or even inharmonious, yet devotion to the one necessarily decreases the time and thought which can be devoted to the other. In the present rush for wealth a concentration of all the energies in that direction is necessary to success, and whatever acts to divert the attention tends to diminish the chances. Thus intellectual acquirement and the ardent pursuit of knowledge are forces adverse to the reign of the money king, and their rapid growth must powerfully aid the other social influences which are arrayed against the efforts of financial monopoly.

When the stage of business relations of which we have above spoken, or some one similar in its results, shall have been reached, and the feverish thirst for money and power be cured by the rise of conditions under which it cannot exist, a new stage of human affairs must arise. The fall of the money power will be accompanied by an increased development of intellectual power. The attention of the active mind of man, turned more and more away from questions of personal aggrandizement, will be devoted more and more to intellectual pursuits, and the great thinkers of the world will probably rise to an eminence in the estimation of the whole public which is but feebly outlined in the estimation in which they are now held by the cultivated few. And when this stage of human development is reached there is no reason to doubt that the controlling power in the community will fall into the hands of the intellectually able. The principle of civil service reform, *i. e.*, of competitive examination for position, now growing with encouraging rapidity, and steadily gaining the strong support of public opinion, is a decided movement in the direction of making ability the standard of position and authority. This is a new principle in enlightened communities. It is full of weaknesses and crudities, and meets with many a shrug of disdain and stroke of opposition. Yet it is growing and will grow, and we may safely look forward to the time in which experience and mental adaptation will be adopted as the sole sufficient tests of suitability for official or industrial position.

At what period in the far future the condition of human affairs here outlined will reach its final culmination it is impossible to declare. But that it will arrive is as sure as that the sun will shine to-morrow. The whole course of human development points forward to it. Modern society is evidently upon the threshold of the empire of the intellect. And with the establishment of this empire the four eras of human government will be completed, ranging from the rule of superstition, of the sword, and of wealth, to that of the intellect, under whose control man will first become truly and completely free.

But is this all? Must our outlook into the future rest here? Is there no other element of civilization that must also have its development, and rise into prominence in human affairs? Undoubtedly there is one. The greatest of all remains to be considered. The mind of man must be fully unfolded in all its faculties before the course of human evolution can be completed. Over the cold government of the intellect another element of rule must rise into prominence, the warm government of the moral feelings. The grandest of all controlling forces, that of love and brotherly sympathy, is already making itself felt, giving rise to the sentiment of the natural unity and fraternity of the whole human race.

Like all the elements of civilization this has had its history, which we need not repeat. It first became a power in human affairs with the mission of Christ, and the establishment of the religious system which bears his name. He first enunciated the golden rule in its highest form, that all men are brothers, that human love is the first of all social duties, that virtue is its own reward, and that social and national lines of demarkation must yield to the sympathetic feeling which tends to link all hearts into one. With his mission religion first ceased to be a creed and became a moral principle. It has struggled ever since under the weight of creed, but the pure light of unselfish morality has shone more and more clearly through its lineaments, until now the secondary element of creed is rapidly falling away, and the grandeur of a life of well-doing, which it has so long half concealed, is becoming revealed in its true proportions.

Human sympathy, an unselfish devotion to the interests of humanity, mingled with an unforced reverence for the spiritual powers, is the highest element of the religion of to-day, and promises to become a controlling power in the future. The long reign of selfishness is slowly approaching its end. Charity has become an important element of modern thought. The local eye-serving charity of the past has grown into a broad and spontaneous feeling which embraces all mankind. Every tale of suffering, no matter how distant it be, awakens a responsive thrill of benevolent sentiment, and every appeal for aid wins generous response from sympathetic souls. Institutions of charity are multiplying with remarkable rapidity. Warm-souled mortals are giving their time with unselfish freedom to the succor of the unfortunate. On every side we see abundant evidence that the reign of human sympathy is fairly inaugurated upon the earth.

This is a condition which has had a rapid unfoldment in modern times, and is increasing with a rapidity little less marked than that of intellectual development. It is the final outcome of the long religious evolution of mankind, the recognition of love as superior to belief, and is the underlying element of the Christian doctrine. It depends for its full unfoldment on the eradication of selfishness from the human soul. Man has long been centripetal in his mental condition. His own interest and comfort have formed the centres upon which his thoughts converged. The attraction has been inward, towards the fulfilment of his personal desires. He is now moving towards a condition of centrifugal development, a sympathetic outreach of human feeling, in which the interest and comfort of others will become more and more a part of his inmost sense, while his personal desires will decline in importance. The troubles of others are becoming our troubles, the sufferings of others our sufferings. That which causes a physical or mental pang in any human being is coming to cause a painful sensation in every sympathetic breast. Man is being tied to man by nerves of emotional relation which reach from soul to soul, which vibrate at every touch through the whole community, and which suggest actions of relief as warmly impulsive as if the acting person was relieving himself from a personal pain. Mankind is, in fact, tending to become one great being, made up of discrete parts, yet linked together as intimately by bonds of sympathy as the human organs are by bonds of sensory nerves.

The condition here indicated exists as yet only in a minor degree. The great mass of mankind are far from having attained any such elevation of soul. Nor can this condition have as rapid a growth as that of intellectual unfoldment. The latter is in consonance with the prevailing selfishness. The former can only be established by the abrogation of selfishness. Yet it is steadily and rapidly growing, and we can look forward with assurance to a coming time, perhaps very far in the future, when the reign of sympathy will become universally extended, and the kingdom of Christ be indeed established upon the earth. Such we conceive will be the fifth and final stage of human control. The ruling power of the intellect will gradually become associated with the impelling influence of the moral sense, and the sympathetic relation which now binds loving soul to soul, and arouses the benevolent to the aid of the unfortunate, will become the highest controlling power upon the earth.

Yet before this era can be fully inaugurated there must arise other conditions which do not now exist. Poverty must in great measure be succeeded by general comfort, suffering from disease be reduced by medical and hygienic knowledge, injury by accident be diminished by greater care and skill, and thus the demand upon charity and sympathy for the suffering be greatly decreased. The final condition of human moral development will be one of general sympathy rather than of general charity, a linking of all souls by the warm bond of sympathetic attraction which in the early days of mankind seldom reached beyond the relations of two accordant souls, but which has ever since been steadily extending its range, and bringing more and more human beings under its control.

In this final stage of human development, the highest of which we can conceive, and the only one in which all the elements of civilization can have their full unfoldment, all discordant influences will have vanished, and the relations of human society may be permanently fixed. The doctrine of the superiority of belief and ceremony over conduct, the stronghold of the priestcraft of the past, will have vanished. The doctrine of special and hereditary personal rights, either to power or wealth, will have likewise disappeared. The ruling energy of intellect will be softened by the fervor of sympathy, and selfishness will cease to be the moving power in the heart of man. Yet self-love will not be out of harmony with brotherly love when suffering and want shall have been greatly reduced, when the chief demand of man upon man shall be for affectionate interest instead of charitable relief, and when the souls of all mankind shall be united by bonds of fellow-feeling as closely as if they were linked by sensitive nerves. Such may be "the second coming of Christ upon the earth." At what remote period in the future it will be reached is beyond the powers of human prophecy to predict, but towards its coming all the lessons of human history point, and all the paths of thought and action tend.

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